Notebook, N-91-11-24

This notebook covers the periods November 1891-September 1892, March-December 1894, June-December 1895, and May 1896-December 1897. There are also some entries from 1899 and 1902-03. It is the first of three extant books used by Albert and Charles Wurth for notes, drawings, tables, and calculations regarding phonograph experiments (see also N-97-12-15, Notebook Series; and "List of Moulds and Catalogue Numbers," National Phonograph Company Records, Company Records Series). Included are entries relating to the electroplating of phonograph cylinders to produce master recordings, along with lists of the sound recordings that were used. There are also notes and drawings of experimental recording apparatus. Some of the notes are in French. The front cover is labeled "Rooms 5 13, 14, 29, 30. Chas Wurth Nov 4th[?] 1891." Another label, partially torn, indicates that the book was used as an exhibit in *American Graphophone Co.* v. *National Phonograph Co.*, United States Circuit Court, District of New Jersey. The book contains 181 numbered pages and has been used in both directions.

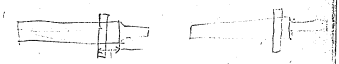
Filming order: 5-165, 177-172, 178-181.

Blank pages not filmed: 156-163, 166-171.

Missing page numbers: 1-4.

23. 1¼ x 5/8

Thermom. à boule −10 à +110 en degrés trop haut
petit à anneau 65 à 140 1/2° trop bas.
" sous anneau 90 à 135 1° trop haut
" au vacuum 1/2° bas
" à la maison 0,5° bas.



13/16

No. of Mould	Diam	~~Rough~~ Mould Length	S. Diam	Finished Cyl. Length	~~Turning~~ Turning off Mach L.	R	Remarks
A							
B							
C							
D							
E							
F	2.167	4.000	2.170	4.009	31½	.48.	at 85° Room Temp 4.010. 2.171.
G							Com. temp. for turning of cylinders.
H							Tool temp. 39° cut on 1st. flow 37½. 2nd. flow 48
J							" " 75-39°. " on 1st flow 34. 2nd. flow 48
K							" " 66-75°. " " " " 38. " " 49
L							Shaved. 75-39° " " 31½ " " 46
M							" " 26° " " 31½ " " 45
N							" " 15° " " " 31 " " 43

Mould	Diam	Length	Diam.	Length	Thr.	Remarks.
O						
P						
Q						
R						
S						
T						
U						
V						
W						
X						
Y						
Z						
St.						

1						
2	T					
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						

	D.	L	D	L	Sh.	Temp	
					1 Sec		
15	F 2.169	4.002	2.173	4.013	31. 46		Turned down Pt.
16							
17	F						
18							
19	F						
20	F						
21							
22							
23							
24							
25							
26							

	Mondal.		Cyl.				
27	F 2.169	4.002	2.172	4.010	31. 46		
28	F						
29							
30							
31							
32							
33							
34							
35							
36							
37	170	093			1½ Short	59°	Rec. OK but finish faulty N.3.
38							
39	169	096	F		OK	70	Rec OK very little scratch.
40							

	D	L	D	L	Str.	Temp	
	20						
41							
42	.170	.183					
43							
44	.169	.058					
45	.171	.200					Rec. OK not over 1" [illegible] (poor boring)
46	F .170	.101			1/2 bl.	57°	Recess good. [illegible] passing to hard.
47	.170	.031					not very distinct. Bad spotted
48							
49							
50							
51			F		1/2 bl.	60	Rec. not [illegible] enough
52	.171	.088	F		1/2 bl.	69	Rec. not quite deep enough, but clean. Dried hard
53					1/2 l	70	Rec. OK

			Cyl.		4 R		
		4.000	2.170		32.44 R		to 75° Room Temp.
54	.170	4.000	2.174	4.008	31.45		at 85° Room Temp
55	.169	.105	2.170				77°
56	.170	.169	F				Rec OK - not pressed endways, leave too large in Diam
57	.166	.024	F				rec. OK [illegible] not end.
58	.168	4.001	2.170	4.008			at 75°
59	.171	.077					
60	.168	.111					
61	.170	.091	F				Rec. OK
62	.170	.094					
63	.165	.064					
64	.171	.175	F				Rec. OK very little iron. Pressed hard leave long
65	.170	.152	F				" " " Scratch on the end. " " core cooled
66							
67							
68							
	20		D				

	D.	L.	D.	L	Sha		
69	14						
70					64	75	Rec OK Sev. Sing.
71							
72							
73							
74							
75							
76							
77	172.5	218			OK	70	Rec OK Music too loud. Sparkle and Bud.
78							
79							
80							
81							
82							
83							
84							
85							
86							
87							
88							
89							
90							
91							
92							
93							
94							
95	15						

Batt. No. IV Cylinder weighs 91,1 grammes
after 118 hours at 25° 382,1 "
Copper Deposit 291 "

Batt. No. 1 Cylinder weighs 82,9 "
after 118 hours at 25° (Cels) 386,9
304

1 Ampère hour deposits 1,82 grammes
360 grammes in 118 hours = 2,15 Ampères.

Thermometer #. 1 3 1/3° too low
17.4° C Standard = 63.32 F (Above 60°)
#. 2. 1/2° too low
3. 2,2° " "
5. 1,4° " "

Post 30-130 1/2° too high

November 24th 1891 Cores cooled to 50°

K Commenced pressing at 112° Core. 86° Tank finished at 110/98
This cyl. has been standing in the mould ever since heating for
3 days. heated 1 hour.
Sh. OK. Surface scratchy and not quite bright but not
perfect. Record good and clear but not hard.

H Core 108° T 90° – 110 · 99 · 55 min Sh. OK
Record good and very hard, a little scratchy.
heavy scratch at the end. Surf. not quite bright

G C.108 · T 92 – 110 · 100 · 55 m Sh. OK 63°
Record very hard. little scratch. Surface bright.
short heavy scratch at end

D. C.110 · T 94 – 110 · 100 – 50 m
Turned the water on through the core 10 min. after Sh. OK
Surface dull but not very scratchy. few dust cracks.
short scratch in commencement. Record OK

6½/2 A C.106 · T 95 – 110 · 100 · – 45 m Sh. OK
Scratchy. Surface a little dull Rec. good.

7½/1 R C.107 T. 97 – 111 · 102 42 m Sh. OK 63°
Surface dull. a little scratchy Record good.
a few length-wise.

6¾/1 S C 109 · T 96 – 111 – 104 · 40 m Sh. OK 66°
Rec. very clear. no scratch. Surface bright.

6¾/1 J C.110 · T 98 – 111 – 103 · 40 m Sh. OK 65° 19
Surface a little dull. Set at beginning and a little throughout
Record good.

V C 110. T 99 - 111-103. 40 mm Shr. OK 62°
T Very good Intersection. Recd very clean. Surface
Bell fine only. Origin 2 long
W C 110 T 99 - 112-105 40 mm Original 5 ok
T Very little scr. Plain only. Poor Cone Thr. mould.
a small crack in the middle length of cyl. Was stuck to
mould at ½ of length from 2d Shr. OK
X C. 110. T 100 - 112 - 104 - 40 mm
41 Shr. 1 long not Very smooth, a few cracks
2 Rec very clean. Was stuck to mould at end of announcement
Shr. 1 long. Finish a little pitty
E C 110. T 100 - 111 - 104. 35 mm
62 [illegible] 40 mm [illegible] 35 m.
1 Shr OK at 62° (K Ins) Very little scratch. Rec. OK
This cyl has been exposed to about 72° after
receiving its mould.
Dec. 1. 1891.
178 Record Cyl. 10 longer than mould. Record Original
and smooth: there was not found off smooth but
dull and scratchy. Temperature in boiler and trunk
either 105° and 108° placed 60 min. Shr. OK
Foolish song
2 43. Very good only at beginning. good sound half
Shr. 1 long.
1 53 OK very little scratch
20 Shr. OK. 70°

1 67. Blank turned down .01 mm smaller than mould.
Record smooth and plain but not very bright,
beginning a little scratchy. Shr. OK. at 74
Surface dull Temp. 110° 108° 50 mm
2 74. Scratchy. Rec good. 3/4 long. at 74°
2 38. Scratchy. Rec OK. Shr. OK 74°
2 66 OK. a little scr. at end. " 68°
1 70 OK
1 75 " very smooth
3 49 Very scratchy.
1 50. OK
2 76. Good. Shr. 1 long. at 70°
has been cooled off in the air at 26°
and has shrunk a little onesided.
1 73 Very good and smooth
2. 58. Rec very good. Scow half very scratchy
2 68 OK very smooth finish stiff, stiff.
2. 40 Record OK Poor song. Very smooth
2 77 Record OK very Smooth Shr. OK
Unbearable
Music too loud. Song too weak,
and not intelligible

1.955
4128

A	My treasure York	Xylophone
B	Patrol coms in(?), Comique	"
C	Dorothea Walter /	Cornet
D	Calm Branches /	"
E		
F	Only to see her face again	"
G	Cry Baby	Jacobin
H		
J	Laughing Song	Johnson
K		
L		
M		
N		
O		
P	Air & Variations	Clarinet
Q		
R		
S	Coming through the Rye	Clarinet
T	Emmett's Lullaby	"
U		
V		
W		
X		
Y		
Z		
Sp	H. M. Stanley	Talking

2.	Maggie Murphy's home	Flute
3.	Press Club March	5. R. Band.
4.	Maggie Murphy's home	Clarinet
5.	Sallie is our Alley.	"
6.		
+ 7.	Polka Brillante	"
8.	Long long ago	Flute
9.	Blue Jay - Polka	Piccolo
10.	Russian Air	Flute
11.		
12.		
13.		
14.		
15.	The Monarch of the Woods	5. R. Band.
16.	Scanlons Swing Song	Jaskin
17.	Ethiopian Clogg-Dance	5. R. Band
18.	Always together	Jaskin
19.	Beautiful Language	5. R. Band.
20.	Out on a Lark	"
21.	The Picture turned towards the Wall	Jaskin
22.	Light of foot - March	5. R. Band.
23.	Winona - March	"
24.	My Todds high Chair	Jaskin
25.	Little Dorrit Waltz	5. R. Band.

26.	Reilly and the 400.	5. R. Band.
27.	Mikado	Orchestra
28	Lebenslust	"
29.	Her own boy Jack	Jaskin
30.	Erminie x	Orchestra
31.	Tarriers' Drill	Jaskin
32.		
33.	Martha Washington Gavotte	Orchestra
34.	Skirt-Dance	Clarinet
35.	Patty Shay	Jaskin
36.	Vienna Dude March	5. R. Band.
37	[illegible]	[illegible]
38.	Soldiers Farewell	Mand. Quartetto
39.	Hard Times	"
40.	Glory Hallaluya	"
41.	Down yonder in the Cornfield	"
42.	High old Time	"
43.	Beautiful Star	"
44.	The Picture turned to the Wall	"
45.	Sally in Our Alley	"
46.	Loin du Bal	1. R. Band.
47.	San Jago Waltz	"
48.	Dress Parade March	"
49.	Idalia Waltz.	"
50	Coniads	Mand. Quartett

51.	On a Bridge	Mank. Quartett.
52.	5 minutes with a Minstrel	1. R. Band.
53.	Back to Dixie	Mank. Quartette
54.	Anvil Polka	1. R. Band.
55.	I whistle and wait for K.	Mank. Quartett.
56.	Sambo's Wedding March	1. R. Band.
57.	Hail Jerusalem	N. Quartett.
58.	Wien bleibt Wien	1. R. Band.
59.	One minute too late	"
60.	My sweetest	"
61.	Darkey's Dream	"
62.	Invincible March	"
63.	Miss McKenzie	Song.
64.	Lovely brown Eyes	1. R. Band.
65.	The Alarm	"
66.	Every Day's to be Sunday by & by	N. Quartett.
67.	Spanish Fandango	1. R. Band.
68.	Anchored	D. B. Stout.
69.	Murphy's Wedding March	"
70.	The wild man of Borneo	"
71.	They're after me	"
72.	He isn't in it	"
73.	The happy three	"
74.	Speak Easy	"
75.	The Song that breaks my heart	"

76.	Mc Mullins Superstitions	D. B. Stout.
77.	Maggie Murphy's home	"
78.	Anna Maria	"
79.	Stella Waltz	Gilmores Band.
80.	Normandy March	Princeton Boys &c.
81.	Twilight Marguerade	Gilmores Band.
82.	Conqueror March	" "
83.	I can't believe her faithless (Song.	Joe Natrus
84.	~~College Songs~~ Merry Monarch -	Gilmores Band.
85.	College Songs	" "
86.	Wm. Tell Ouverture	" "
87.	Fisher-Boy Song	Joe Natrus
88.		
89.		
90.		
91.		
92.		
93.		
94.		
95.		
96.		
97.		
98.		
99.		
100.		

Observations thermométriques en Vaenor
Janvier 12 - 1892 #1

67°	8.52	7.22	—	80°	8.59	0.5
78°	9.7	4.25	—	85.5°	9.14	.4
82	9.22	4		87.5	9.28	
84	9.55			88	9.40	4
85	9.47	3.70		89	9.51	3.8
84	10.[illegible]			90	10.9	4
85	10.20	3.8		90	10.25	3.9
85	10.35			90	10.41	4
84.5	10.54			90	10.59	4
85	11.10	3.7	Sept. 19	90.5	11.15	4
85	11.27	3.8	Oct.	90	11.32	4
~~85~~	~~11.47~~	~~3.7~~		~~90~~	~~11.~~	
74	1.29	6.0		86	1.40	5
83	1.49	4.5	28	89	1.55	4.7
85	2.3	4.5		89	2.8	4.8
84	2.18			90	2.25	4.7
85	2.34			90.5	2.40	4.9
85	2.51		Nuit - Entrée	90.5	2.58	5
86	3.12			90	3.11	
86	3.19			90.5	3.26	
"	3.33			92	3.40	3.55 - 90

~~Janvier 90~~		Janvier 13		92	#2
69.2	8.50.	7.	87	9.8	5
82	9.14	4.4	87	9.20	4.8
83	.21		87	.56	4.5
82	44		87	.51	4.3
82.5	10-	.4	87.3	10.18	4.3
82	.15		87.3	.21	4.3
82.	.30		87.3	.36	4.3
82.1	.45		87.3	.51	4.3
82.2	11-	.4	87.4	11.6	4.3
82.3	11.15		88.1	.21	4.3
82.5	.33	4.2	88.	.38	
82	.51	4.2	87	.56	4.2
74	1.45	6.3	87	2.05	3.6
82.	2.10	3.7	87	2.17	3.5
82	2.27	3.5	87	-32	3.6
82	-42		87	43	3.5
80	3.5	3.4	85	3.10	
80	3.20		85.5	2.27	3.5
80	3.38		85.	3.44	
80	53				

Retiré de la boîte et ~~[illegible]~~ de suite
Enfermé sous la cloche à 6 ½ soir à 12
Temps humide, brouillard et pluie fine
Après les premières 18 min un beau dépôt or pur
mêlé humide, brouillard après.
Ciel clair à midi, couvert après midi
à 2 h. 30. le dépôt sur la partie inférieure
en cylindre brun foncé, part. supérieure
bleue violet.
Épaisseur de la cathode en commençant #1
.002" épaisseur
3 h. 35 bas ¼" beau rouge brun, 1" violet
1½" brun rouge-bleu, 1" en haut beau bleu.
Le cœur de la boîte d'étain était verni!
Dist. entre Cath. et Anode 27.5. Am. et Cyl 44 (Cu Zn)

Janvier 19. 92 —

Réglage à obtenir!

	Exide	Eau	Bain	Cyl. # 2
8.4. PM	76	76	76	
6. "	80	76.5	76.5	Exide bleu foncé
19. 8 AM	76	77.5	75	couvert de cuivre
8.40 "	98			immédiatement!
2 PM		78.	70	Vers fait Chambre 70
4 6 "	75			
20. 8 AM	68	76.5	77.5-79	" " ≃2
6 PM		77	77.5-78.5	Du table 77.5
21 8 AM		77.5-77	78-78.5	
6 PM	77-73	78	78-77	Chambre 73.5
22 8 AM	73	77.7	76	Dehors 76

Bain de Bain chaude 79 froide 77.6
Fond " " 78 " 79
Exide du bain 1 homogène et cylindre
a été retiré 78.2

Janvier 23. 92.

Dimensions du meuble 4.677 2.175

A 4.682 . 2.180 ouvert 65 m. 77.5 97.
Donné un coup de pousse 75
avant de retirer le cone 81.5 96.5

Pas O.K.! Hasek!

D. 4.677 . 2.179

				Exide	Bain	Cone
B. 4.674	2.178	1.9 - 4.680)		98	97.5	
quarante-cinq min		1.8	Imp. constant	77	96	96
C 4.673	2.177 -	Chdr: 92.	Bain 88	Bath Room 80		

Pas O.K à 63° dans la Chambre 91.8 Cone. 90 45 p.r.v

Dist. des Anodes 46.- 27.5

Le cyl. a été chauffé sur le Registre ~~après~~ en attendant de la droite. Il pleut plus en moins toute la journée. Les parties du Vac. ont été bien nettoyé et resté propres

10.10	69.6	5	Commence à paraître
- 21	92.5	4.5	une ceinture jaune (or) à bleue
10 30	78	4-	(rayée) 3/16" à 1° de largeur
- 32	84	3.8	
10.45	89		
- 50	85	3.5	
10.59	80		Couleur du Cyl. Olive foncée
11.08	88.		Ceinture bleu, jaunâtre et
11. 17	82		
- 22	87		
11.32	80	3.3	
- 32	85		
11.47	79		Désaxé 8 Lampes de Résistance
- 53	85	3.4	
1 30	64	6.7	
- 42	79	4-	
1 55	79	3.7	" 2 en plus
2 2	82		
2 14	76		
- 20	83		
2 35	76	3.5	
- 37	92		
2 50	76		Réjouit 6 L.
- 53	84		
3 10	76		
- 14	82		Réjouit 2

3.05 . 17
. 30 . 86
3.15 . 77
31 . 84
49 – 35 . 5.6

Janvier 21. (Rayonné)

Le sujet inférieur bleu foncé, est maintenant rouge foncé en supérieur c'est oxide grès-bleuâtre.

Janvier 20. Dr H. Cornier Marcé

Le Temps est beau clair. Le cyl. a été exposé au soleil et à l'air sous verre

1h 56	79.	6.6.	Détaché 8 L.
2. 4	82		
2. 15	83	5.5	
–20	91		
2. 37.	82		Rayonné 2 L.
– 42	90	4.9	
2. 56	82		
3. 11	90	4.8	
3. 15	81.5		
22	90	4.4	
3. 35	81.5		
39	90		
3. 52	81		
59	90	4.3	
4. 11	81		
– 18	90		
4. 35 –	76		
– 43 –	86	4.5	Contour sombre de cuivre gris Ven. haut. rouge Ven. bas
53	78		

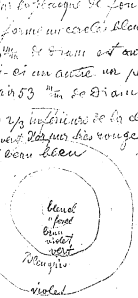
Janvier 21

9. 2	66	5.8
– 10	79	5.1
9. 18	74	
22	82	4.8
9. 32	75	
37	86	4.7
9. 53	77	
57	87	4.8
10. 18 .	77	
– 23 .	85	

L'angle supérieur commence à paraître en bleu bleu 1re Strange

10.06	77		
- 42	84,5	46	
11.2.	76		
- 10	88	45	
11 30	77		
- 32	88		
1 29.	72	62	Toute la surface commence à devenir bleu-violet ; le bleu commencé au milieu
- 51	85	47	
2.7	78		
15	56		
2.30	79	43	Le canal bleu s'étend à 3 m/m et change à jaune-orée l'angle
- 38	86		
2.55	79		Les bottages de fondation se forment un cercle bleu foncé
3.7	78		
3.15	77		
- 28	86		
3.55	79		bord 30 m/m de diam. et autour de celui-ci un autre un peu plus clair 53 m/m de diam.
- 49	87		
4.7	79		Les 2/3 inférieures de la cloche sont couvertes d'un jaune très rouge, et 1/3 haut est bleu bleu
- 23	87		
4 27	79		
- 39	86		
4 40	82	42	
50	87		

Le bel est bien formé vitré de bleu et gris



Janvier 25. 92. Pt. à Chaud # 4 (82)

		Bois	Chemb.	Eau.	Diam.	
					h	
2.30	P.M	75	71,5	78	77,5 - 78	
6	"	76	75	78.8	78.8 78.5	Bien convert après 5 m/m d'amp.
26. 8	AM	68	60	75.3	78.1 77.1	
27 8	"		61.5	72	76 - 74.1	Cloche 12 - 10
6	PM	73	70.	77	79 - 78.5	
28 8	AM	67	[illegible]	[illegible]	[illegible] - 76.7	
1,30	P M			[illegible]	[illegible]	
6	"	73	70	76.5	78.2 78.9 - 77	
8.5	AM	75.5	68	77.5	79.5 - 79.8 - 77.3	25

L'eau [illegible] Alexandrie a été chauffée à 130° le 25 le soir, Refroidi avec de l'eau froide à 110° à 6 h. et secondi à 104° à 8 AM le 27.

D. 2.174. L. 4.102. Chlore 92. Bain 88. Brome 80
2.176 4.150 91.8. Cre 90
50 m/m.

Thr. 1/4 to long ! Record very faint but distinct.

5%
an original eff. has been used for this Dupl.
Cette eire ne paraît pas d'avoir entraîné de dilatation et contraction que celle de 10%

Janvier 26 · 92. N° 5.

Deux bouchons d'or dans le Vacuum.

Durée 2 · m. 12 m. de longueur. Température

Distance des chocs des 2 mm mm

11.23. 69. 8.
11.40 87 55
— 17 85
50 88. 55
1.30 78 8
1.41 87.5 67
1.50 90
57 88 67
2.12 90
17 88 67
2.25 92
36 90 67
2.45 85
52 90 63
3 — 85
4 90
3.16 92
17 90
3.34 85
3.40 90
3.50 85
54 90
4 6 85
12 90 67
4.15 84
4.30 90

Fait bien bien ouvert
Dessous

Fait 12 coups

14.
18

Trace sur les bords
sur le cylindre

Cuivre 2° Large. (1/2" dessous
et 1/2" dessus) bien ouvert
le reste imperceptiblement
le 1/2 haut mieux que le 1/2 du bas

Janvier 27. 92. N° 6

Le cylindre dans du mois de Janvier passé est mis pour 8 ans dans une boîte.

1. 30	65.	8
44	85	7.7
2 –	78.	6.7
– 10	88	6.0
2. 29	74.5	
38.	89	
3. 1.	80	
9	95	
3. 24	79	6.5
38	95	
3. 46	52	
51	88	
4. 13	80	
18	88	

Petite de Lamm

Un cercle de 2½ de large où chaque bande trop peu d'or (pour) sur la chaîne

Février 1. 92. N° 7 (Cigarette sur le bimétal)

Le cylindre est de la même matière qu'précédents mais oblongé et terminé seulement depuis trois jours enfermé dans une boîte 14 jours 1 onz. est 14 jours avec bande de caoutchouc

Tous les points des tables avec la photographie pour ne montre au bout des premiers 10 m IV.

1.30-40	67-88	3.5
1.50. 55.	83. 89.	2.2
2.10. 15.	83-89	2.3
2. 22-25	83.90	2.3.1
2.37-43	83-89	
2.55-58	83-90.	1.3.

Une Trace d'or pour se voit

Une bête couche uniforme.

Maintenant l'argent agrandit l'intervalle, la vaisselle d'or est très personnel bleu clair, mais le bleu foncé fonce la cloche

La garniture de la cloche est bleue, mais vive, tandis que

3.1. Le cyl. est enlevé à 2.26. les deux bouts extrêmes tout entiers d'une très belle teinte bleu clair, le reste est gonflé d'or jaune, le reste est oxidé d'or, cuivre clair.

Temps actuel de vapeur 31 mm

Le cyl. est ôté de la boîte 8 Collège Sangs (Jamore) et mis dans une boîte sèche 1½ d'heure avant de le mettre dans le vacuum. Ce commence à 9h. Ce vacuum

3.45-51	74.5-86	9-5	est très vite. pas de trace
4.13-16	80. 85.	3.3-5	On voit bien violette. Moins que
4.28-33	82-89	3	Paraît plus violette ce vacuum devient
4.48-51	85-88	2.2	bleu clair au lieu de violet.

Trace d'or jaune aux angles extrêmes.

over

Tableau 2.

3.16-25	66-65	4-2.8	
9.5	80	2.1	
10	86		
9.27	79	1.8	
32	85		
9.49	79	1.5	
54	86		
10.11	79		
15	85	1.0	
10.34	79		
38	85	1.1	
10.52	79	1.5	
11.0	88		
11.20	79		
25	85		
11.41	80		
45	85	1.	
11.53	82		
56	86	1.	
1.10.	69.	5	
19	85	2.5	
2.1-5.	80-85	2.	
2.19.23	80-85	1.7	
2.35-41	80-86	1.5	
2.56-32	80-88	1.5	
3.19-26	80-88	1.6	

Du commencement le cyl. est rouge cuivre foncé, au bout de 9 min il est beau jaune or rougé. L'angle opposé sup. est orange foncé (rouge violacé) qui disparaît exposé aux rayons des accidens 5 min. dans.
Il devient jaune rouge cuivre.

On plein jour la vapeur paraît violet, dans l'obscurité beaux blanches.

La garniture sur la cloche est bleu, avec un petit trace de vert de mer.

Lucers est gris dans couche Dorpat couleur bronze.

Il devité une pourpre.

La couleur rouge se change en jaune et est complète par un jaune foncé.

Le jaune s'obscurcit en jaune pâle.

Remis exposition les 2. pompes.

La vapeur est rouge rose. Dès cuivre en plein jour. Le cyl. est couleur naturel. Les extrémités un peu vieil orange.

La couleur est sur la cloche est si épaisse, qu'on ne voit pas l'incandescence des cuivres, bien touché pour les angles ainsi du cyl. sont vieil brun-rouge.

Les vapeurs deviennent beaucoup claires.

Le cyl. rouge cuivre. Les angles bien foncé.

L'angle sup. est bleu.

Dès sera rouge devient peu vert

A 3.20 toute la surface commence à devenir verdâtre et à 3.25 est au beau vert-olive clair, foncé aux beaux contours, plus touché et plus large en-bas et la bord extrême (1/16") redevenant jaune or. L'ancre est couleur bronze, un peu vert sur les angles.

Je ne sondais que les côtés et l'introduction d'air à midi et à soir produisent ces effets. Il doit falloir

3.37.	82.	1.4	
-40	83	1.7	
3 56.	80		
59	84	1.2	
4.9.	80.	1.3	
-13	85	1.6	

* La couleur verte est plus uniforme sur toute la surface

La bande est jaune au bas à 3/16" à 3/16"

Vert au milieu plus foncé !

La cloche est bleu sous bas et le vert le milieu. et vert au milieu.

Temps actuel d'exposition à la vapeur 99 min.

Pavées closes à 3/8 De 7/8

Mis dans le bain froid à 9 Téor. à 11 c. 11.

Temp. du bain haut 44 Bar. 43.

Pris hors le

Atmp.-mot. 27°-28

Le Cyl. s'est ouvert complètement au bouche-rivet. En le plongeant dans le bain l'aiguille de l'atmp.-mot. n'a pas bougé et à monté très lentement à 25 (Courant de l'Accum. #3)

Février 3. No 8 Evening

Le cyl est resté de la boîte de prix et mes bras une boîte seulement est fermé a aeroplane dans en neuf. Les commencés du cyl en est [illegible] est rouge [illegible] après le [illegible] mais elle est pale et a [illegible] en [illegible] jour (vide)

9.1-13	68-85	2,2-3,3	Notre garniture d'observation
-23-[illegible]	80-85	2,6-3	à 10.10 la garn. d'or rouge [illegible]
9.45-49	80-85	2,6	jaune à l'angle extr. sup.
9.57-10.	80-85	2,4	notre cyl est [illegible] violet
10.12-[illegible]	80-85	2,3	La garniture de la cloche est bleu bleue avec une
10.30-34	80-85	2,2	petite tache de vert
10.55-[illegible]	80-85	2,2	
11.11-14	80-85	[illegible]	Le cyl est toujours plus [illegible]
11.37-41	79,5-86	1,9-2,1	[illegible] est [illegible] rouge.
11.55-58	80,5-85	1,2	Jaune violette [illegible]
1.07-13	80,5-90	1,5	La garniture est plus vert
1.52-58	77-85	2,4	Jaune [illegible]
2.9-13	80,5-[illegible]	2,5	Jaune opaque rouge rose
2.21-28	80-85		La [illegible] jaune un peu
2.35-44	80-85	2,6	Le angle [illegible] [illegible]
2.54-3	80-85	2,6	est brun-rouge en haut
3.13-17	80,85	2,5	garniture du cyl est un peu jaune-rouge
3.30-34	80-85	3,2	L'angle sup. du cyl est [illegible]
3.48-52	80-85	3,5	de l'angle. sont blancs

L'angle bleu est bordé de brun foncé est [illegible] gris. Le Cyl est très foncé rouge cuivre

à 3.4. angle moitié la [illegible] jaune. Le 4 bl. l'angle inférieur devient jaune, la [illegible] est la moitié inf. devient vert, supérieure reste rouge foncé

Diminué la résistance de 6 cl.

4.5.-85	80-85	3,9	
4.26-28	79-85	3,6-3,8	Le cyl [illegible] est vert foncé,

Temps actuel Temp. 8,7 mv. or pas sur les deux extrémités

Le quatrième à midi, le vacuum a été maintenu mais en recommençant à 11. un peu d'air est entré.

Février 4. No 9. Merry Morning

Mes yeux la cloche immédiatement — en sortirent de la boîte. Pas de boîte vide. La grange à moins ne va pas bien. Il a passé bien une fenêtre avant que le vacuum atteint a 3,5

9.48-57	80,5-85	4/2,0	Trace [illegible]
10.21-27	79-86	/1,2	[illegible]
10.40.	/81-	/1,5	[illegible]
10.45-49	79,85	/1,4	Cette couche [illegible]
11.3-7	80-87	1/1,3	Remis les No 2. et [illegible] 8 [illegible]
11.26-31	80-89	/1,8/ /1,2	Stop de courir and — remis
11.49-53	82-87	/1,3	4 [illegible] Varient pale violette
1.15-17	78,5-86	3/2,6	garniture du cyl orange [illegible]
1-38-42	80,5-87	1,8/1,8	[illegible]
1.49.58	81-87	1,6/1,5	[illegible]
2.14-17,2	80-85,5	/1,6	[illegible]
2-32-37	80-85	/1,4	[illegible]
2.51-54	80-85	/1,5	[illegible]
3.11.15	80-86	/1,5	[illegible]
3.34.38,5	80-87	1,5	[illegible]
3.55-4	80-87,5	/1,6	[illegible]
4.15-20	81-87		[illegible]

Temps actuel 7,9 mv

Le cyl est [illegible] or jaune clair sur les deux extrémités

Le cyl commence à tourner vert

La boîte de la cloche est [illegible] neuf

le verre un beau bleu foncé [illegible] vert

Février 5. # 10 Un Tell.

Temps aussi possible toutes les opérations les mêmes que le #9. Ce soir que les couleurs sont incertaines régulièrement 80-85

9.9-21	68,5-85	2/4	26
9.30-38	80-85	16	18
9-50, 54,5	80-85	17	18
10.7-11,5	80-85	12	15
10.17-21	80-85	13	14
10-33-52	80-85	12	12
10.9-11.13	80-85	12	12
11.35-40	80-85	8/11	
11.53-56,5	80,5-85	12	
7.22-27	79-85	12/31	
7.45-51	81-85	29	
2.5-24	80-85	29	
2.26-30	79-85	29	
2.46-50	80-85	30	
3.14-18	80-85	31	
3.26-30	80-85	28/32	
3.48-51	80-85	30	
4.8-10	80-86	31	
11.29-34	80-85	29/32	
11.49-54,5	80-85,5	12/34,5	
Temps actuel	91,5	11	11

Belle gam. d'ds sombre rouge
Face d'un natural sur l'angle sup.
La raison est plus est à peu visible
Les deux cercles sont à la même d'ds la lign.
Et ensuite que les deux d'ds plus bas, les couleurs sont les mêmes
Le temps est passablement beau
Changeant entre clair soleil abondant
Bon et le clair un peu vert bleu mentre bon à donner
Quand se commencent à 1 de Cy. est un beau jaune et foncé un peu vert sur l'angle sup.

Février 9. # 11. Arch. à vice normale (Jours beaux hor)

Cyl. de cire fait monté sur une ordinaire à fixat. Cire très claire. Le cyl. a été chauffé de 6 Fév. enfermé dans une boîte sortie au soleil le 8 et laissé à cambrelure. Le temps est sombre et humide. Vent S.W. Remon basse plus clairs ensuite

9.48-57	67-85	2/4,5	
10.8-13	75-85	17	
-23-27	80-85	15	
-40-45	78-86	13	
-55-59	80-85	14	
11.15-19	85-86	12/14	
11.38-42	80-86	14	
11.55,585	81-86	16	
1.30-38	72-85	20/16	
50-56	80-85	20	
2.12-16	80-85	20	
2.30,36	80-85	10/11	
2.51-54	80-85	18	
3.8-12	80-85	10	
3.30-35	80-86	10/10	
Fin à 4			

Soir convert d'une belle couche d'un rouge à la première gamme, mais le cire a bruncl. Les couleurs
= Les couleurs soir à est moins rouge
Quand le commence passe du sens de cyl. paraît une jaune que quand il est entièrement
Il commence à finir pas de cuire. Du rouge visible, à commencé rouge violacé, puis
Beau jaune et clair avec une petite trace de vert sur l'angle sup.
commence à finir vert sur com. finir, beau jaune et un com. ouvert

Bains froids

								Réveil
I	Fév. 9	10.3 AM	α	3/5	Ω	7/5	Fév. 13	PM
II	" "	5 PM	"	1/4	"	[illegible]	" 14	AM
III	" 11	5.30 "		3/5	"	1/16		

Cyl. # 12. (Suite) Délors

			Chb.	Boîte	Eau	Bain h.	Bas.
18.	6.	8.	76	73.2	74.2	76	" 74.5
19	8	M	76.5	74.5	75.5	77.3	76
20.	8	"	72.	74	73.5	77.6	76.3

Bain Temperé

Février 10. p2 Cyl. # 71. Chambre à 67° le 6 Fév.

α 3/8. Ω 1/4 Glycères 27 à 28

			Chambre	Boîte	Eau	Bain		Bas
"	11. 40	AM.	72.5	73	75	4.75	6.75.5	
	5.45	PM	71.	74	74.5	76	75.5	
"	8	AM	78	25	77	79.	77.3	
	6	PM	70	74	76	78	76.8	
12.	10	AM	65	72	75.5	78	76.	
	5.15	PM	75	77	75.5	78	76.3	
13	8	AM	65	70.5	74.5	77	75.5	
"	8	AM	67	66	74.5	77.3	75.5	
"	8	AM	65	67	73	75.6	[illegible]	

La différence de 3½° m'a pas fait du mal, le monde est sec, on pense devant.

Fév.

L'index de l'hydromètre a bougé 2° en montant
Cyl. dans le bain, a monté à 27 en bout de
2 minutes et s'est fixé à 28 en bout.

Fév. 15. Cyl. # 12. Cyl. 0. et argent — Amy. 23 à 24
L'index de l'hydr. est monté. Tiente. Sé. Juste à 10° mais
ensuite à 24.

			Chb.	Boîte	Eau	Bain h.	Bas.
15.	9.45	AM.	76.	73	75	77	6.70
16	8	AM	74	74	75	77	75.3
16	6	PM	71	72	74.6	74.8	73.8
17	8	AM (5°)	67	73	73.5	74.8	73.8
"	1.30	PM	78	74.5	73.5	75.5	74.5
"	6	"	74	74.5	73.5	75.5	74
18	8	AM (24°)	68	72	74	75.8	74.5
"	3.20	PM	70	74.2	74	76	74.8

Fév. 11. 92. # 12. Fèlix-Boy. Regular screw

essai avec 1 dans 100 et une dorée.

Liquide A un peu plus gras et plus coloré

8 lampes mentionnées ont été examinées par entant

de lampes de 16 o.p. et tous ces biches examinés

9-26-32	70-85	26/32		Gorm. Pure violette (ciel)
9-48-51	50-55	13/10		Bellement couvert vert olive clair (jaune)
10-7-13	80-90	10		L'or est entam bien jaune-or-bronzé
10-30-34	52-57	14/15		Le garnissage de la cloche est rose violet
				bien mat un peu bleuâtre à l'air et en passe
10-47-51	77-78	14		Temperance une 6 mention pp 1.16 e.
11-9-13	81-87	9		Gorm. de la cloche toujours violette
11-25	85-88	10		Toutes les 6 mention sont maintenant pp le e.
11-38-41	81	13		L'cyl contient de l'alliage bleu mais
1.17-23	75-86	14/18		pas vert.
1.32-41	80-87	16		Cloche violette sur les côtés un peu
2-42	82-86	20		bleu au milieu — bien bleu foncé
				à la fin de l'opération

Temps actuel 50 sec

Février 12. 92. # 13 mesures après part

Cyl. de cire ordinaire de 1250. Bouchons

[illegible] à accumulateur. [illegible]

Deux lampes 16 c.p. 81 mis. Pôle est 3" de largeur, 1/4 de

la plaque de fond. et la base de la lampe est bien nettoyée

avec de l'acide. Le vin est blanc rouge foncé.

7.50-58	70-85	38/37		Couleur d'or jaune très-pâle
10.12-16	80-82	15/10		Bellement d'or rouge
10.35-40	80-82	14		Cerneau de la cloche bien bleue
				au centre. Pôle base de vert
11.54-59	80-82	9/12		L'or sur le cyl est solid rouge
11-18-23	80-87	10		et jaune sur lampe bien.
11-45-49	79-86	10		
11-54-57	80,5-88	11		
1.18-23	78-85	13/16		Couleur rouge de l'opaque un peu plus
1.40-45	79-85	8/9		le rouge extrême commence à devenir vert
				toutes les opaques de nature 6. sur la
				[illegible] de Fonnier vert.

Fév 12 # 14

Mes nouveau cyl de cire blanc foncé (en 2 cas)

moulé sur cire ordinaire à Lect

2.55-3.	75-86	30/31		Trace d'or excessivement faible
3.19-22,5	81-88	15/19		Couleur d'or rouge assez bien marquée
3-43-47	80,5-87	13		
4.13-7	81-88	16		
26-29	81-86	15		
42-46	80-87	16		Couleur rouge commence à disparaître
55-59	82-88	15		or métallique un peu foncé

Gorm. de la cloche bien bleu pur

Tr. 13. 22 ff 15. Cyf. de eux ord. de 10% 4 ans

9-12-52-63-95-33 | [illegible]

[illegible] | Bien convertis

[illegible] 2015-57 25 | bien convertis.

13-59/77-86 14/24 Dette gain. d'or très peu rouge

11-15-21 / 785-86 / 11/16

11-39-41-78-59 12/14 Condamné qu'or naturel.

12-5 77-86 12/15

12-21-27 / 82-55 14/15 Eau à la bouche mais peu [illegible]

Ce malheureux serait bien fort, qui n'a jamais été tenté, Vive la nature !

506 Experiments about plating glass in the vacuum with the following metals

Gold — Deposit frosty metallic deposit visible in 5 minutes. translucent blue

Platin — Very difficult after 9 hours and 1160 Volts a brown dark deposit bordered by beautiful rainbow-colors translucent brown. Inside of glass covered with dirty gray metallic platinum. anode was far in the glass-plate 3/4"

Iron — [illegible] with the yellowish brown — like a glass-plate. 10 hours 1000 Volts 300 at

Copper — after a failure. Started with 500 Volts and raised gradually to 1160 Volts at the end of 15 hours. Shade half way between cathode and glass-plate (1 1/4") Translucent yellow. Refl. light rainbow! Scratching spots it altogether. No trace of copper on the globe

1102 Cadmium — Very good results - Heavy even coating with a shade glass half way between black-violet and dark chocolate brown. Deposit translucent gray or brown.

Iron March 31 - Exp. 2.

Used 8 wires of .016 for anode 1000 to 1150 Volts Distance between glass and anode and cathode 1" x 1 3/4" - time 2 1/2 days, very short intervals.

Thin microscop-glass 7 x 8 mil. covered with a fine brown translucent coat; not much of a mirror. Very little metallic iron visible on the edges of the glass-plate and on the globe & pictures.

Bismuth April 8. 2 strips 1/2" wide, .016 thick. suspended on nickel-wire 500 Volts. 1000 Volts 1 1/2" distance from the glass-plate

Slot plate covered in 8 hours. dark gray. a little chocolat near the side-edges, greenish in the [illegible] reflects light on the glass-side dark blue on the metal-side gray - a little brownish (metallic bismuth). beautiful mirror on the metal-side; dark-faint mirror on the glass-side. on glass-side on the side-edges 1/4" of pure metallic bismuth with - yellows - reflect and translucent light tan

2.d plate 1 hour 500 volts vacuum 23 mm. connected the 2 anode-plates 1". good metallic deposit opposite the anodes. some metallic reflection on both sides of glass plate (dark bismuth-centre) translucent dark green blue gray. Centre and sides of glass-plate very little deposit. oblique reflection gray. translucent pale tan.

Tin 10 hours 300 to 1200 Volts. Vacuum

Transmitted light. Transparent. Finished mirror on left side. Obliquely reflected light metallic [illegible] yellow [illegible] Thinner.

Cathode 6 Wires fine wire 5 [illegible] insulated [illegible] cathode, platinum. faint trace of [illegible] metallic [illegible] the plate holder. Dull [illegible] [illegible]

Lead April 11. 2 hours. 600 to 1200 V.

Transmitting. Dull [illegible] [illegible] Transparent [illegible] Dirty bluish grey, very [illegible] [illegible] being exposed to the air.

a [illegible] 2½" wide 0.005 has been used. Suspended [illegible] Platinum Pin.

Brass April 12–13. 300 to 1200 Volts.

Light Bluey and hard, Pole [illegible] brass of 0.0035 4" wide 6" long. Suspended on nickel [illegible] Pin.

Transmitted light is mixture-green, changes [illegible] green and olive-brown or bottle-green. At its end of 5 hours a metallic brass-mirror begins to appear but disappears again when a stronger current is applied (1100 Volts.) At the end of 9 hours the transmitted light is dark chromegreen. The oblique reflected light on the metal side is light bluish grey (zinc.) in the centre turning into purple and yellow at the sides; on the glass side the obl. refl. light is a little darker bluish grey with a tinge of purple. Dark purple close to the edge. The supposed plate shows a light deposit of metallic brass. The globe is transmitted dark olive green; reflect. purple, grey & yellow.

Antimony April 15–16. 12 hours 600 to 900 V.

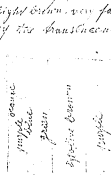
The Sb ground to powder, connected with nickel & platinum-wire. glass-plate 1/16 above. Transluc very faintly yellow: obl. refl. yellow, purple & crimson & blue

Iron April 19.20.21 1000-1100 V.

[illegible] from 4 × 5 ½" cast iron, distance 1½"-2". [illegible] the lice with the wire-gauze.

Nickel April 24 - May 600-1100 V.

[illegible] common short-nickel [illegible] 2½ cm, 5 strips ½" wide, suspended on nickel-wires. [illegible] short nickel ½" wide, 5 cm long. [illegible] the 2d day [illegible] nickel by [illegible] light but very [illegible], hardly perceptible; brandy-colored light [illegible] paint. At the end of the seventh day the transparency is extremely olive-brown. The [illegible] light is [illegible] in [illegible]. The extreme edges are metallic white. The 9th 5 days the [illegible] 1000 volts by stopping to 600-800 V. The deposit seems to darken. By raising again to 1000 it seems to deepen [illegible].



At the beginning the [illegible] nickel covered themselves with green-blue and purple oxide which grew narrower every day and disappeared on the centre-one the 20-spot and on the last one the 28 day. On the evening of 5 May

the vacuum was lost accidentally. In consequence the deposit became more purple the nickel-bag. On the afternoon of the 5th [illegible] the [illegible] the [illegible] been [illegible] the deposit became much darker brown (brandy) and more green (left). At 4.45 p.m. to 6th the pump is connected again for the 1. which showed that a considerable amount of gas had collected in the recipient, before connecting the vacuum stood at 1 m/m, after connecting it rose to over 8 m/m.

The 7th in the morning the pump is disconnected. Vacuum below 1 m/m 800 Volts. Bluish and rose-colored clouds along the walls of the recipient especially on the top. A faint trace of metallic nickel is spreading all over the glass-plate, more pronounced on the left than on the right. (The anode is always a little nearer to the left side) after 1 hour the clouds have all concentrated themselves in a small rose-colored pea at the point of the + pole (from the glass tube), on the back-side. This pea does not flicker and can not be moved with the magnet.

At 10.30 the recipient is [illegible] (disconnected) blue, the transparent back brown. At 11.45 the recipient is exhausted again, before connecting the gauge shows 15 m/m - after connecting 9; 8; 4; 3; 25; 15 (Volts) The appearance of the deposit does not change perceptibly.

~~Finished~~ Finished May 7th 12.15 P.M. —

Refl. day tint-white brownish. Dk coffee-brown

Gold May 9. 10.45 A.M. 900 V. (1)

Anode 1 strip ½" wide .0015 thick rolled on nickel-anode. Cathode nickel-plate ½" wide same thickness. Vacuum-jump pictures with HCl, Ammonia and aqua dist.

Started with 2 mm vacuum, stopped once at after 10 min. vacuum rose to 5 mm, stopped again after 20 m. vacuum down to 1½ mm.

Solution a light green throughout, with a few particles visible, which seem to be in the form of a sludge. Finished at 5 P.M. Anode pure machine gold, with little pure gold on the side, crimson in the crucible. Remainder of green solution with the crimson crucible ready to be carried to the [illegible] with concentrated HCl.

Mercredi 17. 1891. Recommencé à [illegible]
[illegible] entièrement.

[illegible] V. commencé à 21.55 Vac. [illegible]
[illegible] 22.50 [illegible]
[illegible] 22. Recommencé à 50° [illegible]
[illegible] 50° [illegible]
[illegible] 50° [illegible]
[illegible] 50° [illegible]

Mercredi 17. Réal. 50. 55. 60. 70. 72.

84 I	15	15	10	
85	10.40	10	10	
85 I	10	10.5	10	
	10.5	10.5	10	
86 I	10.15	10.5	10	
	10.25	10.5	10	
87 I	10.5	10.75	10	
	9.9	10.25	10	
88 I	10.20	10.5	10	
	9.10			

Mercredi 17. Réal. 72

		Coul.		
84 II	9'	110	95	Mov.
	9.40	111		Coing.
85 II	9.15	106	100	
	10.15	105	98	1/4
86 II	9.35	109	100	
	10.20	108		
84 III	1.24	119	98	Rapidité sans les bouche 11 sur OR
	1.24	106		
85 III		107		Sonne un coup de pesée
86 III	2.10	110		Sonné un coup de pesée
	3	108		OR [illegible] (81 C)
84, IV	5 – 5.10	116	95	Very good. Vendition [illegible]
85 IV	5.15 5	113		[illegible] good. [illegible]
86 IV		112		[illegible] OR good. [illegible] a few cracks in the centre.

Nous les avons ont été reçu un bon coup de press.
Sans dans la chaudière 150, conté un quart d'heure
86 a resté dans la glacière pendant la nuit.

May 18, 02.

84 V. Laissé le moût en l'air. Inhibé l'eau du robinet #6 Chaudière 141. Eau a servi pendant 15 min (à 107) Temp. de la chambre 80°. Passé. Refroidi dans 11. Pesité. Le moût 40 min après commencé eau froide. 35 le moût reste extrêmement trouble.

Sh. 14 mes. Sorbitol ~~[illegible]~~ & Q. Rein not so very clear

85 V. Mis le moût dans une bouteille sur le bain, le même robinet 6. Eau 7 min à 110. Levé la bouteille 2 min et laissé, coulé à 105 et remis à 110. Fermé et remis pour maintenir en 1 et coulé 102 et 107. 15 min. passé et mis dans 11 - 1/2 hr sorbitol. Sh. 3/4 mes.

86 V Laissé le moût en l'air. Rob. 6. Chaud.re 135 Eau à 110 eau. 15 min. passé et mis en 1 et laissé 1 1/4 hr

Sh. 3/4 mes. Rend not very cond. Reduced & Q.

Il me semble que il est n'a pas le temps de la recommencer et cependant les ~~[illegible]~~ vit et le moût est pas changé en même temps.

87 Mis le moût dans une bouteille sur le bain Rob. #6. Glycoconcentratum. Chd.re 133 (Chambre 82) 3.22 à 3.45. à 98° Remédié Eau froide, par cont. etc. et sortir moût de bouteille

Arrêté à 4.2. à 105. passé et mis dans 11.

Rendu toute la liqueur; gratte Sh.?

88 V Reduit en Temp. de la Chd.re à 110 et le bain à 102. Inhibé le moût dans le bain comme d'habitude et laissé couler l'eau pendant 40 m

Commencé à 5.5 avec 141 et 115

Fini à 5.40 " 112 - 106 avec 110

passé et mis dans 1 pendant la nuit.

— Parfait Sh. OK. (70°)

Duplicating Toy-Phonograph-cylinders.

Sept. 20. 1892.

Sept. 24. 9 A.M. 2.5 Amp. 48° Posit. convex
trop vite. contact beaucoup trop fort.
garniture éponge. [illegible] 1152
Sept. 28 5 P.M. [illegible] Amp. après ½ heure eau garnie.
Exp. de l'eau chaude à 60° 1150
A partir de ce jour à 2 P.M. [illegible] insérée
ajusté lumière-moitié à 2° avec cyl., nouveau
[illegible] un nouveau cyl. à 4.30; manivelle
[illegible] à 1° et pour 10 min. à 4½°

Experiments on Recorders for Piano

March 1894

113. R. Blüthner 15" 10 D. pressed to 7 — Hc
Stuffed under felt. Good — experiment

113. R.Bl. 15" 8 D. pressed to 5 — B
Norwegian Bridal Procession ok.

114. R.Bl. 15" 14 Disp. [illegible] — [illegible]
[illegible] with 12 glass Damper.
[illegible]
3. [illegible] with felted Brass Damper [illegible] small.
[illegible]
4. [illegible] with brass [illegible] on [illegible]
and glass damper (Bl.) Very good. first experiment

115 a. 15" # 6 Disp. with Aluminium - spider
[illegible] — R.B. experiment —
b. no damper # 6 Disp. with Cadmium & Nickel Pottering
c. [illegible] with [illegible], [illegible]
The same Disp. with Aluminium w/o Damper - muffled [illegible]
by nothing.

116 a. [illegible] with a 13/16 # 6. (c)
at 15" very good
b. at 15" fair very bad.

117 Newport Variations
from electric. at 116 8" Dist.
a. Short funnel, large and covered with 5/32 tin-tube
Record good, very slightly dull. no x-plosions
b. long funnel; Record slightly sharper no x-p.

118. Two funnel arrangement — a b
Norwegian Bridal Procession — played on Steinway
a with both funnels - ok not very loud
b. with one funnel and b stopped off. muffled

119 Both funnels at about 6" Distance from St. Piano
not very loud.

120. Edison Phonograph Pitch
a. with 2 funnel-Arrgt. at 12 ft Distance (ok)
b. with Pigeon-hole funnel at same " (louder)

100 Zitter-Solo with old funnel Hc 00 Disp. (Damper)

106 Melrose polka with 6 Disp. and Damper
at 9", 9', and 15' Distance.

210. a. Prince Bismarck March # 6 Disp. Damper with small cover
b. Hoch Nordberg Zitter Verein

211. a. Darling courtship March 18th 94
b. Fleeting moments

202 Song & Recitation by Emily Watts
Piano by Miss [illegible]

March 20 2d 1894

203 Wigwiggy Winds on Blasting Pains (red)

8 Damper. Damper with large Circle

204 " " # 6 " OK " " "

March 28 th 94

Experiments with Ingersoll funnel and Spring-damper Recorders. Diaphragms 4½ to 5½

130 Old Funnel. Stinway Rec # 1 Rig Blast off Without Damper up.

131 P.H. Funnel Rig Blasting - dials - " "

132 " Cummings " " Pat Spring " 2

133 a " " O.K. " " OK " " 3

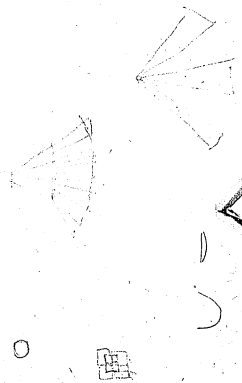
" 6. " " " " " " 4

134 a. " " magnified " " " 75 with Damper

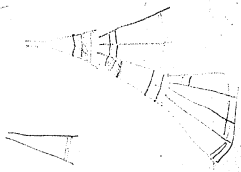
6. " " " " " " without "

135 a OK (Cinder) " " 76 with Damper

6. explosion " " 71 with Damper (round circle)



1 — Divided into 4
Each of first 4 divided again into 4



10-21-94

Reades # 6 (Pivot)	Diapason	5 ft	2 Dyell Robbins		30 in	Treble
" 2	gray	"	5 ft	7 " foot "	21	" "
4	"	"	5 ft	2 nice tight "	46	" "
3	"	"	5 ft	2 dyell [illegible]	64	" "
6			5	/ nice tight	70	
5	"		5 ft	/ Reeves	33	" "

136 a # 6 muffed and rattling
6. # 5 ok [illegible]
137 a # 3 [illegible]
6 # 2 [illegible]
~~138~~ a # 1 [illegible] good
6 # 4 OK [illegible] # 5

~~139~~ The above reeds were taken with the 5 stopping balanced PH pipe at about 15" pressure.
Steinway - Piano

139 Rippling waves. OK.
4 Recorder. Steinway 8". 5th P.H.T.

140. Rippling waves. OK
Every thing the same, added grass damper.

~~141~~ Rippling waves, OK
Recorder # 5. Same F. and D.T.

142. Rippling Waves
Rec. # 5. and Tin. Disk, C.
not as good as 141

143 Hard rubber, mouthpiece uncovered all the above Records
Dia Tubes. Steinway. 24"
1 # 6 Recorder, changed rubber cushions to prior
Diameter 15/16 (very soft). Brass fixed mouth piece
& Tubes.

144 Die Trieste
6 Recd. ~~Brass HRMP~~ HRMP. R. Diameter 24"
Speak 140. Cushions covered down slight.
N.G.

145 Rippling waves. Steinway
7" grains [illegible] to mouth piece [illegible]
Tube to Diaphr. = Voice clear.
Piano clear, but far away.

146 Tuned. 9 on Diaphr. [illegible]
[illegible] Steinway OK.
Rec. Same as same F.R.M.P. Distance 20" and Recorder # 5

April 25th 94

O.K Recorder # 2. Diameter .085 Tub. .007 Diaphr. [illegible]
" 3. " " .065 " "
3 OK on Oak Diaphr. rubber [illegible] on Rec. Diaphr.

Recorder # 6. Diameter .088. Cushions .030 Diameter, .23 Tubing (M.R.H.P.)
Cap. fast

April 26

146 Rec. # 6. .088 Diaphr. [illegible]
" " 2. .087 "
" " 3. .085 "
" " 4. .085 " [illegible]
" " 5. .085 " [illegible]

148. Apr. 27.

Recorder # 3. .006 Diaphr. additional Damper & ring

1.) [illegible] rattling but very much ring in the Pond.

2. a little less rattling, sound clearer

3. 3.

Records any difference between

4. all of the [illegible]

5.)

6.) Combination of # 2 & 5.

all made very [illegible]

149. 15 part. Combination # 6 OK

25 " Diaphr. # 2 more rattling & louder.

150 Whispering Winds Combination # 6 Recorder # 3. R. Blas

151 Rippling Waves Recd. # 2 beautiful

152 Moravika Recorder # 3 without additional damper

1 part on Oak Blasius

2 " " Mahogany "

78 loud but rattling and muffled

153 Silversteins Moravika Rec # 1 clear and no

expression but not very loud Steinway

153 B. Ditto 24. Rec # (14) loud but rattling.

154 Ditto & Blas. Rec. # 3 (Comb. 6) rattling

153. III " " Childrens song 10R

157 Andante Sonata 2 op Beethoven. Duo for Piano & Violin

played by Kindermann Dreesen & Reinecke & Grunsland

Diaphr # 2 (soft) very Lovely but clear & sharp.

160 Don Sebastiano. Duo by Heller & Ernst

Played by Mr. & Miss L. Paul [illegible]

Diaphr # 6. Steel rubber stiffness .003 gauge 5/8 Diam.

Record distinct and sharp like muffled.

The same Recorder # 6. with a diaphragm of stocking linen of .003 thickness. glued with oil and dust side of lock .006 gauge center ½" Diam.

not better nor worse than .005 gauge. rattling on some notes and muffled

Recorder # 4. Diaphragm of silk Pigs-gut oiled

Very sensitive but not better than .006 gauge

a little rattling at first notes of Scale.

Diaphragms of oiled silk and gold-beaters skin are not good; can not be distributed tight enough

162 Pigeon Hole Funnel. Recorder # 5
Prince Rupprecht's March. Zither Duet: Kinsella

164 Same Funnel & Recorder
a. Lucia Sextet Dimondon — Cecil Kinsella (OK)
b. Smoky Glass-funnel

163 old funnel; same Recorder (OK)
I and not Bua

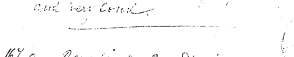
165 Old funnel; same recorder (OK)
a. Die Stille: Zither duett
b. The happy musician — B.B.C. Quartet

166. Silver-to-Steel March — Blaring Piano
P.H. Funnel. 46" Dia. Recorder # 6 Diaphragm .003
Old Guinea Diaphragm. Heavy Stiffener. N.G. Rattling.

166 Recorder # 5. .006 normal damper springs, fast staccato very little rattle and rattling.

b. Recorder # 4. .006. with glass-strips. soft rubber cushion on top of bamboo-post.
first part: Sacred Shulton — rattling
second part: Track of [illegible] — low rattling and low [illegible]

166 c. Recorder # 2. Diaphragm .005.
.006, on the lower side with on top layer of [illegible] and radial rays over it. — no effect rattling.
b added on central heavy layer on top side 7/4" Diam. 3/8 wide. no effect
c altered shape of stopper-cap from 1 to 2 — less rattling

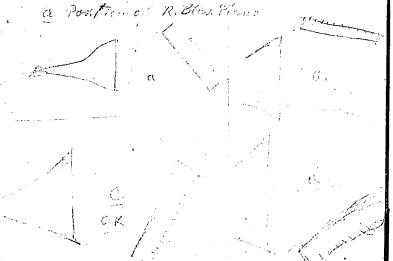


d. added 4 small rubber cushions at 1234. — much less sensitive. no rattling. Sextet
Regular stylus - high angle

165. [illegible] March!

Recorder #6 Gilt-Drafts. H.H. Tuo.

a Position of R. Blow Piano



169 Liberty Bell-March Blasius P.

Recorder #5 .0055 Drafts. [illegible] Stopped

Position C of Piano. Tunnel hammered

and covered with Some-lace

no cork no ringing

170 Liberty Bell March. Steinway. oblique

hard wax, [illegible] Stopped right angles (Mar #3)

no rattling ——— no swell

no ringing sound

171 Silver Tears. Blasius. Position C 18" [illegible] 38"

a Recorder #6 .008 Drafts. no ringing sound

b. Rec #2. Double Graftes. .0055 OK

the upper one clear, the lower covered with Rubber-glove.

172. Noir. Bribed procession. Blasius. C.

Recorder #2 [illegible]

173 Whispering Winds Blasius removed [illegible]

174 Rippling waves Blasius C

Recorder #1. .005 Drafts. [illegible] Stopped

damper-spring Light. OK a little muffled.

175 " " .0055 OK a little [illegible]

176 " " [illegible] Stopped with [illegible] muffler.

177 Die Forelle [illegible] " " Blasius

Nov. 13.

175. Replaced with [illegible] under Stopped spring by

bamboo-[illegible] a little less muffled. Blasius

but a little rattling [illegible] as before

177 Whispering winds Steinway. Rec #1. OK

178 Die Forelle OK " " " "

Recorder # 1. .006 Diop.
" # 2. .0055 " Auto cover
" # 3 .0055
May. 16. " # 4 .006.
" # 5 .0055
" # 6 .008.

179. a. Aurora
b. Rippling Waves

Recr # 3 A

no scratch, nothing else.
not muffled. not muffling

May 16. Steinway

35 Recorder # 7 Diop. .007. Small-Stylus.
Silber-Bassier-Spice - OK Steinway
Liberty-bell-march. Recorder - [illegible]
no muffling, no overtones

~~181. Whispering Winds~~ Rippling waves

Recorder # 8. .006 Diop. Bamboo-Spr.
special blue sapphire. Auto cover, angle same
as # 7. - Condition but a little squeaking.

182 Chopin. Waltz.
Recorder # 8. changed .006 Diop. for. every thing
Very else the same. Auto a little cover
a little, rattling and rattlety.

May 17th 14

181. Whispering Winds
a. Recorder # 1. a little muffled
b. " # 7 cleaner but a little scratchy

182a Recorder # 2. Diop. .0065 Over thickness
Bamboo Special blue stylus. Bamboo-Damper giving
b. Rec # 7 OK (without damper) a little muffled

Recorder # 4. Bamboo spice not particular to
operation.

183 Rippling Waves. a. Recorder # 8. with nothing
1. [illegible] [illegible] [illegible]
round [illegible] [illegible]
Recommend no muffler.

180. Liberty-bell-march Recorder # 3
not the machine. No overtones. The spice
Bamboo the sound is not quite as large as the
wood end. [illegible]

184 Chopin Polonaise Recorder # 8.
Loud without rattling.

185 Rippling Waves Rec. # 8 Diop. .0065

May 27.

Recorder # 9. Diaphr. .0005. Diam .015

" " 8. " .0060 " 20 Clear Diaphr.

" " 7 " .0007 " 20 Clear Diaphr.

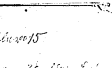
" " 6 " .00053 " 20

" " 10. " .005 20 Clear D.

141 Repeating Wave Recorder = 6. spider-leg.

Clear without splitting, but not very clear

186 Repeating Wind S. Rec. # 6



June 1. 94

[illegible] 10. [illegible]

[illegible] Diaphr. 1/16 [illegible] splitting and muffled

[illegible] " 1/16 " " "

C. " " " " 1/16 Diaphr. very tight

176 The same with glass Diaphr. on [illegible] n.g.

June 4th 94

Recorder # 2. Thickness Diaphr. .004 cemented on both sides, with .010 glass & rotation 1/8 from rotating ring (upper glass gritted) muffled & splitting

189 Diaphr of Silk-gauze glass .012. 3/32 Diam.

a no 2 lined

[illegible] Silk Diaphr. glass .010. 1" Diam. No silk

b. between the glass disk and the retaining ring to left not with oil.

a little louder, also a little rattling.

C. Skin .001. glass .012 3/32 Diam. glass with dim. and ring oiled. — loud but rattling.

187 Diaphr Valve. Rec # 10. Diaphr .001 thick with .010 glass 6 1/64 Diam. Clear but splitting

188. The same. Tracheal tube deeper and Diaphr. tightened more. OK !!!

185 Stethoscope. Splitting muffled. Diaphr very tight

176. Wheezing [illegible] Cord & rubber

141 a Stethoscope Diaphr .005. with .010 glass disk 1" Diam on one side and 15/32 D. on the other. not tested

b. Recorder # 4. .006 Diaphr with Bower-Barff (BB)

Jumper spring very tight O.K

Called by Lehmann

June 9th 1894

Warm bright white Chopin

190 Receiver No. 2. Diaphragm .0045 hole in cap 1/4". 1 chamois cushion below 2 above screwed down very tight. Steinway P. P.H. Funnel OK. soft and full. no splitting.

191 The same with 40 obl. funnel inside the Very loud, but not so sweet as 190 (Tiny piano) no splitting

194. The same with Cap 3/8 helical more air-space between Diaph and Cap.

4. P.H.F. not as loud as 190,

June 11th

Receiver No 3. Diaphragm of stiff felt .050 thick with glass-centre 5/16 Diam. .010 thick. Round faint but distinct.

192. Diaph. of felt .050, paper hot h. .017 glass-centre of a 1/4" Diam. .010 thick. Recd. a little louder

b. Felt of .040 of a little softer, somewhat thick added on the rough side and covered with linen-paper, pressed hot h. .011. Clearer and louder than a

June 13. 94

192a

Receiver No 10. Diaph of black india-rubber sheeting with glass-centre .0065 thick 15/16 Diam. Vibr. Diam. 15/64 loud but not very sensitive.

193 The same with glass centre 1/4" Diam. Very sensitive, a little better

a. old funnel

b. P.H.F. funnel. (less mellow)

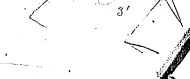
194. Receiver No 4 Diaph glass .003 – 1 1/16. Hole in cap 3/16

a Very sensitive and clear. no squeaks.

One chamois cushion on each side and screwed down medium tight. The 3/8 Chopin stand also sounds to the P.H. Funnel.

for a – 1

for b. – 2



b Very loud & clear

June 15th 94

195 Telephone Valve (Warner) Blessing, (Cleveland)

Receiver No 4 Diaph of wyke Lt. Unbleached and pressed .037 and covered on rough side with linen .0005 thick. Sounds a little muffled but very loud but distinct

936 June 15th

Blaiguin 9 h. 11 m

2 ch. Recorder # 10. Chrom Valve [illegible]
Diaphs of rubber coated muslin .005) with glass centre
[illegible] 1.830. Loud & clear (a little yielding.) OK.

112 Recorder #10. Rubber coated muslin with glass centre .010 × .925. Speaking at a distance of 37 feet from Phonogr. piano and loud
Selection on Weber Piano at 22 feet from Phonog. sounds louder than speech.
[illegible]
[illegible] same as 112 [illegible]
136 [illegible]

June 16th

Recorder # 3. Diaphs of black rubber .019 thick not [illegible] glass.

117 Recorder # [illegible] Diaphs. [illegible] 1/16 Diam. .007 thick
Outlook [illegible] OK.

June 22nd 1894

112 a Small Diaphs. of felt 1/16 Diam. 3/64 thick 19/32 hole covered with glass diaphs. .825 D. .010 thick very low-note No. 9.

b. Regular size Diaphs. of hard felt (white Piano felt)

with glass centre .010 × .500.
a little louder but rattling and muffled.

119 a Small diaphs. of felt

covered with glass centre .008 × 11/16
not [illegible] loud [illegible]

b. Regular size Diaphs of hard white felt 1/16 thick covered on top with tissue-paper [illegible] and held down with a wire-spring

the cap is off the felt 180°. Very faint and muffled at the lower notes.
a little clearer at the high notes.

c. The cap is screwed down so that it bears slightly on the chromo cushion-ring.
a little clearer but not much louder

June 22. Rec. #3 Blaring funnel, [illegible] 7th"

132 Small diaph. felt .050. 1 1/16 outside diam. 9/16 hole

glass centre .010 × 11/16. small hole in

diaph. cap. (3/16)

Andante Adagio O.K. [illegible]

June 23rd Recorder #4 Felt-Ring diaph. Glass-centre $\frac{15}{16}$ (.010)

Felt Thick, .285 Wide

Glass diaph. on the lower side. [illegible]

126 — [illegible]

Felt Ring .061 thick .250 Wide Glass diaph. .011 × $\frac{31}{32}$

glass on the lower side. [illegible]

June 23rd

196 Andante Adagio [illegible] #6)

Felt ring .082 thick, .0300 wide. Glass. .0115 × .857.

glass low. OK. [illegible])

197 Valse Brillante Cho. in [illegible] #3.) [illegible]

June 14th

Vivace Cello

198 a Recorder #2. Loud & clear

b " " #3. Much too loud.

[illegible] 80.

[illegible] Recorder #11 [illegible] No. 1st .014 thick

cushions [illegible] thick [illegible]

a. diaph. [illegible] between cushions [illegible]

b. cushion [illegible] down to [illegible]

very low.

c. [illegible] diaph. [illegible] very low. very.

100 Vivace 1st .007 thick.

centre [illegible]

a. [illegible] [illegible]

very [illegible] [illegible]

Good Records.

1.1.	203.	Wisp. Winds.	March 23.	1894	R.L.
1	159	Andante Sotto voce	May 8		P.D.
1	163	I and mei Dea	" 13		
2	184	Chopin's Polonaise	" 17		R.L.
2	182	Silver-Stars	" 17		—
3	35	Liberty Bells March	" 16		
3	128	Die Fualler	" 16		
2	101	Norw. Bridal Procession	March 9		
1	100	Zittes, Prinz Bismarck, &c.	" 18		
2	186	Wisp. Winds	May 25		
1	185	Rippling Waves	" 17		
1	117	Andante Adagio	June 15		
1	190	Chopin Waltz	" 9		

July 6th 1894

Recommence opérer des représentations à chaud

6 et 7 14h. Préparations.

B Boiler
C core
T tank

Imp 16th to 21. Moules F et 54.

54. 3. B 121
C 113
T 102
45 m

F3. C 120
30 m.

C 118
40 m

M1. C. 117
B. 129 n.g.
25 m.

4. C. 115
30 m

7. C 117
B 124
T 98
30 m.

M2. Temp. in room 95
Tested from 4 to 7.45 P.M.
4. C. 115
C. 115
35 m.

5. C. 115
T 102
B. 119
40 m

C. 117
35 m

6. C. 114

8. C. 115
B 120
35 m

3. C. 125
20 m

7. C. 112
B. 124
50 m.

9. C. 114
B 124
35 m.

4. C. 123
20 m

5. C.

10. C. 115
30

5. 118. 35 m

54. 10. C. 115
45 m.

11. C. 115
30

30. C. 119
T 108
B 129
25 m.

30₃ 119. 28 m

30₄ 120. 20 m

11. 115
35

12 115
35

13 115
35

F 12. C. 117
B. 125
T 102
50 m.

Mould has been in ice-box overnight. Cyl. turned up, 008 larger than mould. Boiler pressing could not go to 15 m. Tank in not much solution

F 13 C. 117
30 m.

Boiled the core after pressing.

14. C 117
35

15. C. 117
T 102
B. 119
40 m

The mould was held 10 m in the T before immersing on top hot H.O.

15. C. 116.5
B. 128.
32 m.

23 119 – 25 m

24. 115. 28.
25. 119. 25

31. C. 122. 22 m

32. 2. Washed mould with water
C. 121. 20 m

17. C 114
35

18. C. 117. T 110.
30 m.

26. B 130
T 117
C
20 m.

19. C. 120. T 110
35 m

27. 119. 23 m

20. C. 119
20 m.

28. 120. 25. Put the hot water in the core and dipped the whole mould in ice water for 2 minutes, before taking out the core

21. C. 119.
25 m.

22. C. 119½ 20 m

29 the same.

Cleaned & clean

54. 11. C. 115½
B 118
35 m.

15. C. 116½
C 35 m.

16. C. 115 T 110
20. 30. m.

B. 125

17. C. 120
T 110.
20 m.

18. C. 119
20 m.

19. 115
25

20 115
25

21. 112
25

22. 112
30

23 118
25

24. B 130
T 117
C 119
22 m

25. C/20 22 m

26. C 120 25.
Cooled in mould before removing

(Sh. 16) The mould was left in the T for 20 m. before turning on the hot H.O.

July 23 — 25.

54. 27. C. 119
Stn OK
after 25 m
B. 130
T 113
25 m

28 C. 118
cooled c. 30 m

29. Cooled the mould in ice water before inserting Cyl.
C. 120. 25 m

30 C. 118. 30 m
mould not cooled before inserting cyl.

31. C. 120. 30 m

32. C. 118. 30 m

33 C. 119. 40 m

34. C. 118
B 129
T 114
25 m

35. 113. 25

36 C. 120. 20
cleaned only with steel

37 C. 118 27

38. C. 117. 25

39 C. 117. 25
cleaned only with steel after removal

40. 118. 25

41. B. 118½
T 114
C 118
35 m

42. 117½. 25

43. 120. 25

44. 120. 25
45. 123½. 20

46. 122. 20

47. B 117
T 110
C. 120. 20 m
48. C 117. 18 m

49. B 137
T 118
C 125
18

50 124½
18 m

51. 125. 20

52. 125. 20

53 125. 20

54. 125. 20

55 124. 20

56 124. 20

57 123. 20

58. B. 137
T. 120
C 125. 27 m

59. C. 124. 20 m

60. C. 126. 18 m

61 C. 127. 17

62 C. 126. 18

63. 125. 20

64 126. 18

65. 125. 20.

66 125. 20

67. 125. 20
T 113
B 134

68. B 138½

July 28 T 118
C 127. 20

69. 127. 18

70. 128. 18

71. 127. 18

72 126. 18

July. 23. 94. T-Mould. 7

July 23

T 30. C. 120
B 13 L
T 115
30 m

31 C. 119
B 130
T 113
35

32. C. 118 cooled 30. before.

33. cooled mould before inserting Cyl.
C 120. 25 m.

34. Before T 30 m before turning on Hot H.O.
C. 122. 20 m

35 C. 118½ 30 m

36. C. 119. 30

38. C. 119. 20

39. C. 118
B 129
T 114
25 m

40. C. 118. 25

41. C. 118. 28

42. B. 118. 28.
mould cooled before inserting Cyl.

43. 118. 25

B 117½. 25

The core was not cooled before withdrawing from mould. 44 30. 1. 31 and 54. 27.

For 32. The stone was turned off at 75° F 27.0 and the core cooled off before removal.

44. 119. 27 m

45. B. 118½
T. 114
C. 118
40 m

46. 117½. 30.

47. 121½. 20
48. 122. 20

49. 121. 20
50. 122. 20

51. 123. 20

52. 123½. 20

53. B 137
T 110
C. 125
15 m

54 B 137
T 118
C. 126
22 m

55 125. 2 m

56. 125. 20 m

57 126½. 20 m

58 128. 18

59. 126. 20

60. 125. 20 m

61. 125. 20 m

62. 125. 20 m

63. B 137
T 120
C 120
20 m

64 C. 125. 22

65. C. 127. 17

66. C 126. 18

67 C 126. 18

68. C. 126. 18

69. C. 126. 18

70. C. 126. 18

71. C 126. 19

72 C 125. 18 m
C 124

73 C. 128. 18
T 118
Sub. B 138

74. 127. 18 m

75. 129. 17 m

76 127. 18

77 127. 18

930 A
B 140
C 130
T 110
30 m
74. 126.19
75 126.18
76 125.20
77 118.20
78 127.20
79. 122.20
80. 127.18
81. 127.18
82. 126.18
83. 126.17
84. 125.19
85. 125.20
86. 125.19
87. 122.19
88. 126.20
89. 123.22
90. 123.20
91. 116.20
92. 125.20
93. 129.16
94. 130.15
95. 128.17
96. 127.19
97. 127.19
98. 128.17
99. 128.17

100 127.20
101. 129.22
not marked
102. 129.18
103. 128.19
104. 124.22
105. 122.25
106. 120.24
107 125.20
108 125.20
109 124.20
110. 124.20
111 124.15
112. 124.20
113. 124.20
114. 124.20
115. 124.20
116. 125.20
117. 124.20 (OR)
118. 124.20
119. 125.25
120 125.20
121. 124.20
122. 123-25
B 120. T 115
123. 123.22
124. 125.20
125. 126.18
126. 125.18
1 126.19

Aug. 5.94
B 6
C. 125.30
B. 128 T 110
127. 125.20
128. 125.20
129. 125.20
130 126.18
131 125.20
132. 126.18
133. 127.18
134. 126.18
135. B. 135 C
T 119
C. 124.24
All checked with HO.
136 R 122.25)-20
137. 124. 20
Worked in 3 Iterations
with geologist and HO.
138. 126. 25
Worked in 3 Iterations
2 observers and HO.
part month in succession
while waiting for HO.
strength ed.
139. 126.12
140.
checked only with
Iterations 2 observers
141. 124. 20
142 125.20
143. 128.15
144. 127.19

Aug. 16
54. 1965.
C. 124. 25 m
146. 123.20 m
147. 124.20
148. 123.20
149. 123.20
150. 122.20
151. 123.20

105. 127.20
106. 125.18
107. 128.18
108. 125.20
109. 123.22
110. 127.18
111. 127.18
112. 126.18
113. 125.20
114. 124.23
115. 124.20
116. 124.20
117. 124.20
118. 124.20
119. 124.20
120. 124.22
121. 125.20
122. 124.20
123. 124.20
124. 124.22
125. 124.22
126. 126.18 (OR)
127. 123.20
128. 125.22
129. 125.20
130. 125.18
131. 127.12
132. 126.18
133. 125.20
134. 125.20
135. 124.20
136. 125.18
137. 124.20
138. 124.20
139. 124.20
140. 125.20
141 126.18
142. B 105 C
T 119
C 124.25 m
Worked with HO.
143. 124.20 (R)
144. 126.18 R
145 125.20
146. 124.20
147. 122.20 R
148. 122.25
149. 125.20
150. 125.20
151. 126.25
151. B 135
T
C 115.20
153 124.22
154. 124.20
155. 125.20
156. 124.20
157. 124.20
158. 124.20

Aug. 6. 94
132. 127.20
B 128 T 111
133. 125.24
134. 125.20
135. 124.20
136. 125.18
137. 124.20
138. 124.20
139 124.20
140. 125.20
141 126.18
142. B 105 C
T 119
C 124.25 m
Worked with HO.
143. 124.20 (R)
144. 126.18 R
145 125.20
146. 124.20
147. 122.20 R
148. 122.25
149. 125.20
150. 125.20
151. 126.25
151. B 135
T
C 115.20
153 124.22
154. 124.20
155. 125.20
156. 124.20
157. 124.20
158. 124.20

Aug. 9.
163. B. 143.
T 124
C. 128. 15m
164. 128.20
165. 127.15
166. 127.17
167. 127.17
168. 127.17
169. 132.17
170. 128.15
171. 128.15
172. 129.14
173. 127.17
Worked with Theodolite
and HO. only.
174. 129.15
175. 128.16
176. 129.14
177. 127.17
178. 125.20
179. 125.20
180. 127.17
181. 128.17
182. 127 17
183. 128. 17
184. 129. 15
185. 127. 18
186. 129. 15
187. 130. 14
188. 129. 15
189. 129. 15

Aug. 11th 1894

F. 190. B. 136
T. 100
C. 124.22

Ad. 123½ 24. ser.

190. 125. 22.
192. 123. 20.
196 124. 20.
198. 120. 32 Aug. 13
196. 125. 20.
197. 123. 20.
198. 125. 20.
199. 124. 20
200. 124. 20
201. 126. 18.
202. 126.020
203 127. 18
204. 127. 22.
205. 127. 18
206. 124. 20
207. 126. 20
208. 124. 20
209. 124. 20
210. 123. 20
211. 123. 17
212. 124. 20
213. 130. 16
214. 126. 20
215. 127. 20
216. 125. 20

217. 125. 20
218. 124. 20
219. 123. 20
220. 121. 05

Aug. 20. Ad.

221. C. 125. 24
222 124. 20
223 124. 20
224 125. 20
225. 122. 22
226 124. 20
227 124. 20
228. 127. 20
229. 123. 20
230. 123. 20
231. 122. 20
232. 123. 22
233. 124. 20
234. ~~123. 20~~
235 124. 20
236. 123½. 21
237. 123. 20
238. 122. 22
239. 123. 18
240. 124. 20

234. 125. 18
model not attended at all.
opt. decay

Planes received
Aug. 15–18
" 120.
" 101
" 222

Aug. 22. 1894

241. 123. 28
242. 124. 20
243. 123. 20
244. 125. 18
245. 123½ 20
246. 123½ 20
247. 123. 20
248. 123½ 20
249. 125. 18
250. 124. 20
251. 124. 20
252. 124. 20
253. 125. 20 Model
254. 126. 18
255. 125. 20
256. 125. 20 not received
257. 125. 20
258. 125. 20 Ad.
259. 125. 20
260. 124. 20 ob.
261. 124. 20
262. 123. 20
263 123. 20
264. 123. 20
265. 127. 22. model
266 125. 20 "
267 124½ 20 (model)
268. 124. 20.
269. 123. 20 ne.
270. 123 20 ob.
271. 125. 20 ob.
272. 124. 20 "
273. 125. 20 "
274. 126. 20 "
275. 125. 20 "
276. 123. 20 ne
277. 124. 20 ob.
278. 124. 20 ob.
279. 124. 20 "
280. 124. 20 ob.
281. 125. 20 ob.
282. 125. 20 ob.
283. 124. 20 ob.

Aug. 27th.

284. 125. 22 ob.
285. 125. 20 ne. 333. 125. 20
286. 124. 20 ob. 334. 124. 20
287. 121. 20 ne. 335. 123. 20
288. 120. 20 ob. 336. 121. 20
289. 121. 20 " 337. 123. 20
290. 121. 20 " 338. 121. 20
291. 121. 25 " 339. 121. 20
292. 120. 20 " 340. 120. 20
293. 120. 20 " 341. 120. 20
294. 122. 20 " 342. 120. 20
295. 120. 20 " 343. 120. 20
296. 120. 20 " 344. 120. 20
297. 122. 20 " 345. 125. 20
298. 121. 20 " 346. 124. 20
299. 121. 20 " 347. 122. 20
300. 121. 20 " 348. 122. 20
301. 121. 20 " 349. 122. 20
302. 121. 20 " 350. 122. 20
303. 121. 20 "
304. 121. 20 "
305. 121. 20 "
306. 120. 20 "
307. 122. 20 "
308. 123. 20 "
309. 122. 20 "
310. 122. 20 "
311. 120. 20 "
312. 121. 20 "
313. 121. 20 "
314. 121. 20 "
315. 121. 20 "
316. 121. 20 "
317. 121. 20 "
318. 121. 20
319. 121. 20

320. 122. 20.
321. 121. 20
322. 120. 20
323. 120. 20
324. 121. 20
325. 122. 20
326. 124. 20
327. 121. 20
328. 121. 20 TC.
329. 121. 20 ob.
330. 120. 20

331. 119. 20
332. 121. 17
333. 125. 20
334. 124. 20
335. 123. 20
336. 121. 20
337. 123. 20
338. 121. 20
339. 121. 20
340. 120. 20
341. 120. 20
342. 120. 20
343. 120. 20
344. 120. 20
345. 125. 20
346. 124. 20
347. 122. 20
348. 122. 20
349. 122. 20
350. 122. 20

Aug. 29. 1894
351. 119. 20
352. 123. 25.
353. 121. 20
354. 123. 20
355. 122. 20
356. 120. 20
357. 120. 20
358. 120. 20
359. 120. 20
360. 120. 20
361. 120. 20
362. 123. 20
363. 121. 20
364. 120. 20
365. 121. 20
366. 121. 20. model
367. 121. 20
368. 120. 20
369. 120. 20
370. 120. 20
371. 122. 20
372. 121. 20
373. 131. 15
374. 130. 20
375. 121. 20
376. 120. 20
377. 121. 20

378. 121. 20
379. 120. 20
380. 120. 20
381. 120. 20
382. 118. 20
383. 113. 20
384. 123. 20
385. 121. 20
386. 120. 20
387. 120. 20
388. 120. 20
389. 119. 20
390. 119. 20
391. 120. 20
392. 119. 20
393. 123. 20
394. 120. 20
395. 125. 20
396. 123. 20
397. 121. 20
398. 122. 20
399. 121. 20
400. 120. 20
401. 119. 20
402. 118. 20
403. 121. 20
404. 122. 20
405. 122. 20
406. 120. 20
407. 119. 20
408. 117. 20
409. 119. 20
410. 120. 20
411. 119. 20
412. 120. 20
413. 123. 20
414. 124. 20
415. 119. 20
416. 125. 20
417. 123. 20
418. 123. 20
419. 123. 20
420. 123. 20
421. 121. 20
422. 124. 20
423. 124. 20

Sept. 21
424.120.20
425.120.20
426.118.20
427.123.20
428.124.20
429.125.20
430.122.20
431.121.20
432.120.20 w
433.120.20
434.120.20
435.121.20
436.122.20
437.120.20
438.121.20
439.122.20
440.122.20
441.124.20
442.123.20
Sept. 24.
443.119.25
444.119.20
445.120.20
446.122.20
447.123.20
448.120.20
449.120.20
450.120.20
451.119.20
452.123.20
453.123.20
454.119.20
455.122.20
456.124.20
457.124.20
458.120.20
459.127.20
460.123.20
461.121.20
462.120.20
463.122.20 [illegible]
464.123.20
465.124.20
466.120.20
467.122.20

468.122.20
469.123.20
470.126.20
471.125.20
472.125.20
473.123.20
474.127.20
475.124.20
Oct. 12, 1894
476.115.30
477.118.20
478.118.25
479.120.20
480.120.20
481.125.20
482.122.20
483.124.20
484.118.20
485.120.20
486.120.20
487.121.20
Oct. 15.
488.120.30
489.120.20
490.125.20
491.122.20
492.125.20
493.123.20
494.125.20
495.125.20
496.122.20
497.122.20
498.123.20
499.122.20
500.122.20
501.123.20
502.124.20
503.123.20
504.123.20
505.125.20
506.123.20
507.123.20
508.122.20
509.123.25
510.124.20
511.122.20

#500 Oct. 16, 1894

512.118.20
513.126.20
514.124.20
515.120.20
516.119.25
517.131.20
518.122.20
519.121.20
520.120.20
521.121.20
522.125.20
523.128.20
524.125.20
525.125.20
526.116.30
527.121.25
528.122.20
529.124.20
530.125.20
531.123.20
532.122.20
533.124.20
534.124.20
Oct. 25, 1894
535.118.30
536.121.20
537.120.20
538.119.20
539.120.20
540.125.15
541.121.20
542.126.20
543.125.20
544.124.20
545.124.20
546.122.20
547.122.20
548.123.20
549.124.20
550.124.20
551.120.20
552.122.20
553.122.20
554.122.20
555.122.20

#600 Nov. 2, 1894

Oct. 29.
556.122.20
557.124.20
558.125.20
559.125.20
560.124.20
561.121.20
562.127.20
563.122.20
564.129.20
565.130.18
566.125.20
567.126.20
568.122.20
569.126.20
570.122.20
571.123.20
572.122.20
573.126.20
574.124.20
575.124.20
576.124.20
577.124.20
578.122.20
579.122.20
580.122.20
581.122.20
582.122.20
583.122.20
584.124.20
585.124.20
586.124.20
587.124.20
Nov. 1, 1894
588.128.20
589.125.20
590.123.20
591.123.20
592.123.20
593.122.20
594.124.20
595.124.20
596.123.25
597.122.20
598.121.20
599.123.20
600.124.20
601.124.20
602.123.20
603.123.20
604.122.20
605.125.20
606.124.20
607.122.20
608.124.20
609.120.20 [illegible]
610.126.20 [illegible]

611.126.20
612.124.20
613.125.20
614.124.20
615.122.20
616.120.20
617.121.20
618.121.20
Nov. 5, 1894
619.126.20
620.126.20
621.122.20
622.122.20
623.123.20
624.120.20
625.120.20
626.125.20
627.126.20
628.125.20 10
629.126.20
630.125.20
631.123.20
632.124.20
633.125.20
634.120.20
635.125.20
636.127.20
637.127.20
638.125.20
639.123.20
640.125.20
641.135.20
642.125.20
643.122.20
644.128.20
645.125.20
646.124.20
647.123.20
648.122.20 w.f.
649.125.20
650.125.20 w.
651.130.20 w.
652.120.20
653.122.20
654.124.20
655.124.20
656.130.20
657.125.20
658.130.20
659.130.15
660.125.20
661.129.15
662.125.20

Nov. 9, 1894
663.123.20
664.124.20
665.123.20
666.124.20
667.125.18
668.123.18
669.125.20
670.124.25
671.122.20
672.122.20
673.129.15
674.124.20 12
675.123.20
676.122.20
677.126.20
678.125.20
679.126.20
680.126.20
Nov. 15, 1894
681.124.20
682.124.25
683.123.20
684.130.20
685.122.20
686.125.15
687.125.15
688.125.15
689.127.20
690.127.15
691.125.20
692.130.20
693.125.20
694.130.20
695.130.15
696.130.15
697.129.20
698.120.20
699.130.20
700.129.15
701.126.20
702.130.20
703.129.20
Nov. 19, 1894
704.121.20
705.125.20
706.127.20
707.[illegible]

708.125.20
709.122.20
710.125.20
711.125.20
712.125.20
713.123.20
714.122.20
715.126.20
716.125.20
717.123.20
718.122.20
719.125.20
720.122.20
721.125.20
722.122.20
723.126.20
724.125.20
725.124.20
726.130.15
727.130.15
728.130.20
729.125.20
730.125.20
731.130.15
732.130.15
733.130.20
734.125.20
735.130.15
736.125.20
737.127.20
738.130.20
739.130.15 x
740.130.20
741.130.13 x
742.122.20
743.130.13
744.126.20
745.125.20
746.122.20
747.122.20
748.120.20
749.130.15
750.126.20
751.120.20 x
752.120.20
753.120.20
754.121.20
755.120.20
756.121.20
757.120.20
758.120.20
759.119.20
760.120.20
761.129.15
762.134.10 x
763.130.10 x

764.110.35
765.128.10
766.130.10
767.125.10 x
768.124.15
769.124.15
Nov. 26, 1894
770.110.30
771.119.25
772.129.15
773.126.17
774.119.25
775.127.15
776.120.20
777.120.20
778.127.20
779.127.20
780.127.15
781.122.20
782.124.20
783.124.20
784.122.20
785.122.15
786.122.20
787.127.15
788.125.20
789.122.20
790.121.20
791.121.20
792.124.20
793.124.20
794.120.20
795.120.20
796.128.20
797.125.15
798.124.20
799.125.18
800.125.15
801.125.15
802.123.20
803.119.27
804.130.20
805.130.15
806.123.15
807.123.15
808.126.15
809.126.20
810.123.15
811.125.20
812.121.15
813.123.15
814.132.15
815.128.15
816.127.15
817.127.15
818.128.15
819.129.20
820.[illegible]

#800 Nov. 28, 1894

Dec. 6, 1894
821.122.23
822.125.15
823.130.15
824.130.20
825.129.20
826.130.15
827.129.20
828.127.15
829.125.15
830.125.15
831.122.20
832.127.15
833.126.20
834.125.15
835.125.20
836.123.17
837.130.15
838.127.15
839.127.15
840.125.15
841.123.15
842.125.20
843.130.20
844.130.15
845.130.15
846.130.17
847.130.20
848.125.15
849.129.15
850.129.15
Dec. 10, 1894
851.120.20
852.125.20
853.124.15
854.123.15
855.123.15
856.123.15
857.123.15
858.122.15
859.125.17
860.125.20
861.123.15
862.127.15
863.129.20
864.130.15
865.135.15
866.125.15
867.125.15
868.130.15
869.125.15
870.130.15
871.127.15
872.126.15
873.124.15
874.127.15
875.122.15
876.[illegible]

#900 Dec. 13, 1894

877.129.15
878.127.15
879.125.15
880.124.15
881.123.15
882.126.15
883.124.15
884.123.15
885.125.15
886.126.15
887.123.15
888.124.15
889.123.15
890.130.15
891.129.15
892.130.15
893.128.15
894.127.15
895.126.15
896.121.15
897.132.15
898.130.15
899.130.15
900.126.15
901.126.15
902.125.15
903.130.17
904.130.15
905.125.15
906.125.15
907.128.15
908.125.15
909.123.15
910.123.15
911.126.15
912.126.15
913.125.15
914.124.15
915.123.15
916.125.15
917.128.15
918.130.15
919.128.15
920.135.15
921.130.15
Dec. 19, 1894
922.122.15
923.128.15
924.123.15
925.123.15
926.126.15
927.126.15
928.122.20
929.128.15
930.127.15
931.127.15
932.125.15
933.122.15
934.127.15
935.123.15
936.127.20
937.125.20
938.125.15
939.127.15
940.123.15

#1000 Dec. 27, 1894

942.12?.15
943.12?.15
944.127.15
945.123.15
946.123.15
947.123.15
948.127.15
949.126.15
950.124.15
951.125.15
952.125.15
953.121.15
954.120.15
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961.130.15
962.134.10
963.133.12
964.125.15
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966.123.15
967.127.15
968.125.15
969.123.15
970.123.20
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972.131.15
973.125.15
974.127.15
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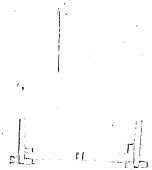
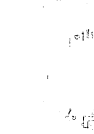
976.126.15
977.125.15
978.125.15
979.127.15
980.125.20
981.124.15
982.122.15
983.124.20
984.130.15
985.139.15
986.130.15
987.124.15
988.135.10
989.125.15
990.126.20
991.122.15
992.127.20
993.123.20
994.125.17
995.123.15
996.127.15
997.125.15
998.130.20
999.128.15
1000.128.20
1001.123.27

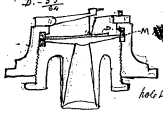




Inspection of Recorders # 13. 14. 16. 18. 19. 20
on Time 20th 1895

No 13 Diaph. straight styrene, pin-hinged
damper spring 7/16 by Draper, gives $\frac{53}{64}$
and small gold-beaters skin. .001

Dim of R. - 1"
D. - $\frac{53}{64}$



[illegible] is clothing
and nothing to [illegible]

Chas. Wright

No 14 Diaphr. glass .004 - 1 1/16
narrow .020 gossiclett cushions
straight hinged styrene lever
small damper-spring 3/8 hole in cap 5/16"

Records clear and sharp, metallic
not very loud.

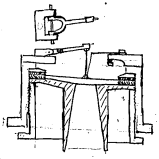
First record on 400th thread machine
was taken with this recorder
April 24th 1895 by
Chas. Wright

Piano played by
Miss Katherine Morgan

15. Diaphragm glass regular size 1.333. wide cushion rings of .020 gross. bottom .200 wide brass flange on both sides. Straight stylus lever with thin spring-fulcrum

Record not loud enough.

16.



Diaphragm glass. .0035, wide gossamer flanges .020 thick. .175 wide. Brass flange same width at the bottom. Straight, hinged stylus lever, small damperspr.

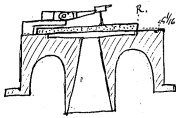
Records clear, very sensitive, but sharp metallic sound. no cuttering, no explosions

No 17. Same as # 15.

Except that the cushions and cushion-flanges are 1/16" wider.

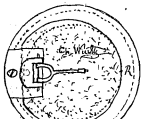
N. J.

No 18. Same as # 16



A Membrane of .001. double goldbeaters-skin is glued to the edge 1/16" wide of the holder. On top of the membrane is glued a diaphragm of cork 1/16 thick and 1.168 diam.

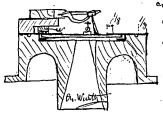
The diam. of the recess in the holder is 1.050". At R the edge of the cork diaphr and of the recess meet.



Straight, hinged stylus lever.

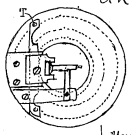
Very sensitive but a little rattling at certain notes.

19. June 19th 1895.



Diaphragm of thin gossamer-cloth 0.007. shellacked on cloth-side. glued on edge of holder 1/8 wide with rubber-silk down. and on glass-diaphr. 0.010. 1/16" also 1/8" wide. Torsion-spring fastened on top of rubber cloth and pressed down with brass-wedge. Dampersprng pulling on glass-diaphr. 1/8" behind Stylus-post. Sound-hole 1/16" filed oval towards stylus.

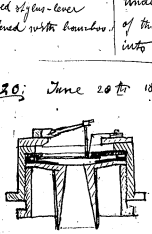
O.K.



curved stylus-lever stiffened with bamboo.

Under glass diaphr. a cushion ring of thick gossamer-cloth is glued down into the recess of the holder.

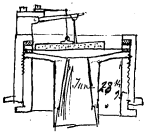
20. June 20th 1895. Altered # 15.



Membrane of thick gossamer 0.020. Diaphragm Aluminium 0.013 thick, hard rolled 1/16" diam. straight stylus-lever with spring-fulcrum. Damper-spring pulling on stylus-post. Damper-cloth glued on round-hole

O.K. (not very loud)

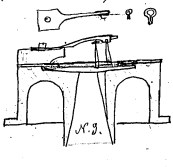
21. Changed # 10 200 Ths. Recorder



Diaphragm of gold-beater skin and cork. Damper-spring pulling on cork disk 1/8 behind Stylus-post.

If spring-tension too hard it is not sensitif enough if tension is loose, it rattles n. g.

22. June 29th 1895



Membrane of white Rubber-hospital-cloth shellacked on cloth-side. Diaphr. aluminium 0.013 thick 1/16 diam. Stylus-lever bent of steel 0.008 thick. Damperspring pretend the same way as # 19.

July 2.nd 1895. Removed dampersprng. on # 22. = louder & clearer

July 10. Put on a dampersprng of # 10 needle. O.K. not very loud.

July 3rd 1895.

Changed # 21. (210/10/10)

Diaphragm Aluminum 0.012 x 1/16
Membrane Goss. cloth 0.007. shellacked.
damper-spring 1/8' behind stylus-post.
good but not very loud

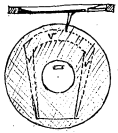
July 11th Put new membrane of double gold-beater-skin into Rec # XIII. (.010) glued after whole face of glass-disk and shellacked on both sides. O.K.
damperspring on stylus-post

July 11th Rec. # XIV (.010)

Glued a membrane of ~~sk~~ varnished tracing-cloth on the edge of the cap and glass-disk on outside
Damperspring on stylus-post

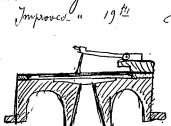
July 12. Rec # 10. 200/.010.)
Improved the same way as # 13 with varnished tracing cloth but stretched on separate ring and glass diaphragm on the inside of membrane (towards the cap.) sound-hole in cap ovalized. O.K.

July 13-15 Rec. # XX (0.010)



Tongue - disk of hard aluminum glued on membrane of varnished tracing-cloth.
v. vibrating space
no damperspring.
Not very loud

Made July. 16. and Improved " 19th Rec # 18. (0.010)



Fixed the same way as # 20. but the tongue is parallel instead of taper as in # 20. Vibrating space 0/32 not loud.
Vibrating space increased to 1/32 July 19th Very sensitive!

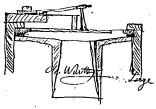
July 18th. Rec # 16 (200/.010) improved the same as # 20. Tongue of rosewood 1/8 thick membrane varnished tracing cloth. damperspring 3/8 behind stylus lever. not sensitive enough
Vib. space 0 — 1/8. Tongue on the outside

July 22 Da 1895

Improved # 16 200/010

Put wood-tongue inside

Damper block of cork pressed down by damperspring behind the stylus-post — very clear.



Edge Elongated hole in Diaph. cap

O.K.

Aug. 7th 1895. Rec. # XXIII. 400/2010.

Tongue Diaphragme of medium (2010) gossamer cloth and white-wood, stretched on ring inside. Tongue 0.027 thick Membrane .0005. Tongue on inside.

O.K.

Aug. 8th Tongue Diaphragme put into Automatic Reproducer 2010. Membrane varnished tracing-cloth — tongue 2010 white-wood tongue on the inside.

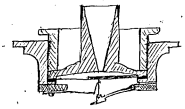
O.K.

Least scratch 1.) # 18 on Cigarette wax without
2.) " 20 Carcasse (for Dupl. originals)
next scratch 3.) " 19 Oct. 14th 1895
XIII. 3. XXIII.

Oct. 16th 1895.

Improved Receiver # 14. 200/010 400

Hole in diaph. cap 0.140"

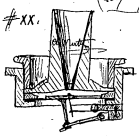


Diaph. 1 1/16" tracing-linen shellac'd on both sides (French varnish) glass diaph. 1 1/16" diam. .005 thick. on the inside of membrane membrane fastened to the rim of the diaph.-cap with shellac.

Clear & natural but not very loud

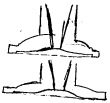
Damperspring attached to stylus post.

Oct 23 Improved Rec. # 20 with stylus-arm of # 18.



(200/400) hole in Diaph.-cap. 5/32"
membrane of gossamer cloth & tongue of white wood on inside
damperspring close behind stylus-post — thick rubber cushion under, on top of diaph. organe-ring
not loud, otherwise O.K.

Oct. 24th 95

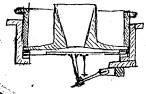


Diaphragm opens with small hole
no improvement

Oct. 30th 1895

Improved Rec. # 21

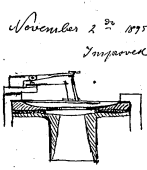
Sylvester # 16. Diaphragm same as # 10 (20/20) Membrane of Tracing-cloth varnished on both sides with French Lacker. Excentric Diaphr. of glass 1050 Diam. .007 thick fastened on inside with liquid Bellcoll (fresh dissolved gutta) clamp-joining 1/2 behind stem-post 1/4" hole in Diaphr.-cap.



Very cond!

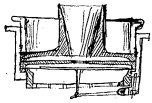
November 2nd 1895.

Improved Recorder # 20.



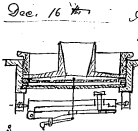
Cup-shaped Diaphr. Disc with hole in center 3/4" Diam Regular cap (flat) with cushion of thick gross cloth with hole 3/4". Membrane of Tracing-cloth Bellcoll on both sides Very sensitive. Glass diaphr. .009 x 1050 fastened on inside

Dec. 16th 1895.



Changed Rec. # 10 (20/20) for 320/10/. Membrane of Bellcoll Tracing cloth Diaphr. of Aluminum .0012 thick. Double air chamber above Diaphragm Tightening ring below to stretch membrane Very muffled and rumbling. N.G.

Dec. 16th



Air-cushion for automatic repeaters for 400 and 320 Threads Lower bottom of Tulip-wood .075 thick, hole in center .038. Diaphr. Wood tongue on Tracing cl. Bearing between Diaphr and Damper bottom. N.G.

Dec. 17 Removed Damper bottom and Exchanged Tong Diaphr. by Excentric-Aluminum Disc-Diaphr Membrane thick Goldbeater cloth. Loud but muffled and rumbling N.G.

Dec. 18th

Removed Alum.-Cloth. Diaphr. and put in Solid-wood Diaphr. N.G. rattling.

Dec. 26th Tongue-diaphr. of Aluminum and Tracing-cloth French varnished on one side, Bellcoll on the other. O.K.

Replaced Wood-Tongue Diaphr. by Cloth-post & Alum.-Cloth.

Dec. 23 Do. 15. Dec. 23rd 97

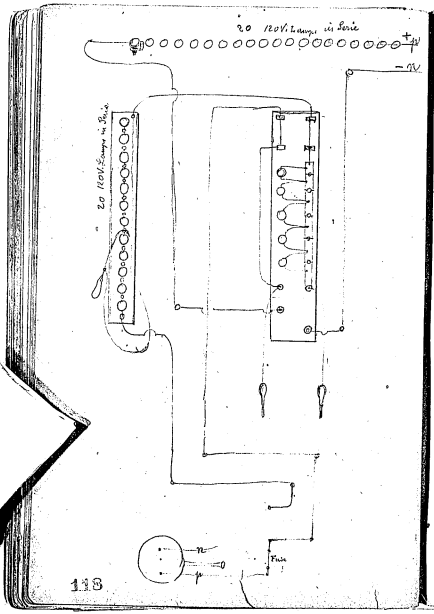
Recorder # 10. Diapha. mod. Jess. cloth and Tulip-wood. ng. not bond.

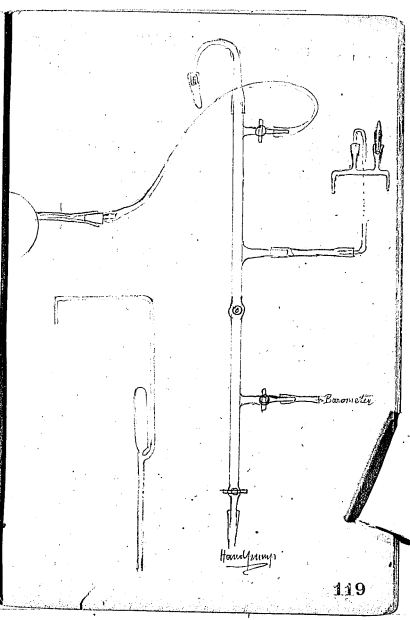
Dec. 23rd Rec. # 10. Diapha. Tracing-cloth French Varn. on one side and shellac on other. Diapha. Alum. disc. (.002) flattened same as above C.K.

Dec. 24th Rec. # 10. Mod. Jessamer cloth. Alum. disc. .010 x 1/8. Stretched loose. good but a little muffled.

Dec. 27th Rec. # 10. Thicker Jess cloth; French Varnished on cloth side. Alum. disk .010 x 1" stretched on above cup-ring. fastened in rubber-side not fr. varnish.

January 27. 96


20 120V. Lampen in Serie
+ p
− N
20 120V. Lampen in Serie
n
p
Fuse


Barometer
Handpumpe

May and June 1896

Made small mercury pumps and fixtures for plating large - 15x Cylinders in Room 5
Also Mould for 2. cylinders.

July 10 th Cyl # 1. finish plating
after 2 days only 1/2 night.
Started with 22 lamps - 100 breaks p. sec.
finishing with 6 " good bronze colored deposit.
Gold on belt comes of with Ammonia in a coherent film. Used very little cosmetic for belt.

July 21 Cyl # 2. finished after 1½ days
dark red deposit. Deposit in belt very faint, washes of with ammonia in exceedingly fine powder, comes of hard. Used very much cosmetic for belt.
Started with 10 lamps finished with 6.
Used old ½" gold-strip for 1 & 2.

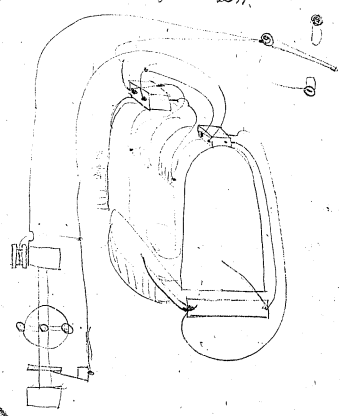
August 4 th. Cyl # 3.
finished after 14 hours in Vacuum.
Used beeswax for belt packing.
2 strips of new gold 0.001 and fine strip on both edges. Started with 10 lamps 155 Cr. reduced to 8. 6. 5. 4. up again to 12 and finished with 10. Changed polarity now and then. Used the narrow strip as anode left the end of 10 inch (in vac) the cyl is nice yellow on strip and bottom as 3/4 in the rest is purple. Towards the 12 hours a beautiful metalic gold deposit is appearing all along. 9 lamps for the last hour
It seems to be the best way to use 10 lamps 150 breaks the narrow anode and no changes of polarity. 5 minutes exposure and 10 to 15 min rest. or 3 min. exp. and 10 m. rest. according to vacuum.

In the copper-bath, the plating stops at a deep scratch at the lower end but recommences later on to within ¼" from the lower end. The gold-strips have to be ½" longer on each end.

Aug. 12th to 22nd Vacation

Aug. 24. Started on Taking-machine for large Lime Cylinders 240-280-300

L. 6 3/8" × 2.750 D.



Octob. 1st 1896

First experiment with Trialos [illegible] machine (without inlet) 5 3/8 × 2.750.

November 10th & 11th

2 Records taken with Piano & Clarinet (Nov. 11)
In Duplicating purposes min Records # 20 (imp.)

Nov. 19th Doré Cyl. (Piano) avec la pompe à vacuum à main. Vac 24 – 1 cte. 12 Lampes (à 16) après 2 fois la dorure est bonne, un peu chronohistre. Tirés Nov. 21. à 9 h.

Nov. 23-28. Installé la pompe avec moteur électrique; 30 coups par min. L'Aimant fait 40 Rev. par min.
Etamé le moule de Cyl. de 3" ——

Nov. 30. 3.30 S. Commencé à dorer Cyl. 5 (Clarinet & Piano) Après 20 min le Vacuum descend à 1 cm (25 coup p. min.). 13 Lampes. à 6 heures la dorure est assez prononcée, un peu rongeante. Les 2 extrémités ne sont pas so bien couvert comme le reste. Un anneau de cuivre bronzé, mis sur le cyl. ne sert à rien. La cloche a été sellé avec de la cometique et de

la cire; et nous commençons le courant à 8 heures 15 min. avec 5 à 10 mil. d'int.
Après 20 à 25 min. la dorure a commencé à se montrer tout le long (grisâtre).
Pour produire une couleur d'or naturelle j'ai continué l'opération une journée et demi environ. Vers midi du 1er Déc. la couleur était la même comme cyl. # 4, et bien uniforme tout le long; pas de trace de bleu aux angles. Dans l'après-midi les angles commencent à devenir bleu; mais la couleur du cyl. est un magnifique or naturel. Pour la nuit j'ai laissé entrer un peu d'air dans la cloche et continué l'opération Déc 2nd jusqu'à midi. Le bleu a entièrement disparu, seulement dans 1 heure; on bas dans 2 heures et vers midi les angles extrêmes ont tourné un peu vert; le dessus rouge-pourpre, en bas une bande de 5 m/m au dessus de l'angle est brun-pourpre.
La couleur du cyl. entier est jaune, un peu verdâtre. A 10 h 20 ouvre un peu d'air entre la cloche.

Il me semble maintenant de suivre les règles suivantes

1) Laisser la cloche seulement avec de la cire jaune.
2) Lancer le courant seulement quand le thermom. a descendu à 1 deg. ou moins.
3) Ne jamais arrêter la pompe. Commencer avec 30 amp. pas min et descendre à 25 vers la fin.
4) Pendant la première heure continuer le courant pour 15 min avec 10 min d'intervalle. Après la 1re 7 minutes et 7 min d'intervalles.
5. Commencer avec 14 lampes et 12 après la première heure.
6. Laisser entrer de l'air dans la cloche pendant la nuit ou quand les angles tournent bleu.
7. Nombre de revolutions de la roue à interrupt. de l'indicateur 600 p. m. - 120 interrup. par seconde
= 2 lampes parallèl.

(9.10 AM)

Decembre 4th. Mis dans le bain de cuivre le cyl # 5. La resistance est ajoutée a 2 1/2 amp. avec un cyl. provisoire. Temperature de la boîte et de la liqueur 46° F.
Le cyl a été dans la boîte pendant la nuit. Aussitôt après l'immersion le thermometre indique 1 Amp. et monte doucement à 2,2 au bout de 2 ou 3 min.

Quand j'ai inspecté a cyl. au cours de 40 min. il était bien convexe, tout le long. La tige, avec cet règle de manière que l'impression indique toujours 2 Amps. Il m'a semblé que le courant était un peu trop forte.
Densité du liquide 1125 at 60°. Ajouté un peu de liquide de 1140, et une cuillère à thé de Poj. C.P.

Janvier 4 - 97

Trouvé 6 blanc 10 mm plus long et 4 mm plus large en diam. L'eau dans la chaudière à 165 et dans le bain 100°. Durée de l'immersion 115 minutes. L'eau dans le Noyau central a 110 au commencement et monte à 123 - 125 et redescend à 125. Le moule, n'ayant pas de manteau ne resiste pas la pression et se fend.

Janvier 30. Copie # 2. (moule II)
Cyl. de cire blanche, ne retrécie pas autant que la cire brune. Le moule a 6.25 tourpé et fini sur ce cylindre

Feb. 4th 1897 p.10 Copie # 3 (de moule II)

Chaudière	Boîte.	Noyau	
95	100	—	(65°) cyl. 4 mm.
135	102	100	plus long et
140	107	117	2 mm plus large
	107	123	que moule

Le gros bout du cyl. est 1/8 du bout de l'arbre du Noyau. L'écrou du noyau est 1/4" du ~~dehors~~ Couvercle du moule. (6339 x 56) 2779 (87).
Le cylindre monte sur le noyau et presse si fort contre l'écrou qu'il n'y a presque pas moyen de le desserrer. La cire tout ensuite a un mollice allong du noyau. Lond & Scratchby

Copie # 4. (moule II.)
Le gros bout du cyl. est 1/32 du bout de l'arbre. L'écrou n'est pas mis sur le noyau. Le cyl. est 6 mm plus long et 2 mm plus large que le moule (à 65°)

	Chaudière	Boîte	Noyau	
2.12.	125	70.	105	40 min.
2.50	123	100	120	

Clear & little scratch

Longueur de la copie 6341 de 52 à LXVII Aegol
Diamètre Aegol pour 5 2780 de 97

Copie # 5. of 75°. Le cyl. est 3m plus long et 2m pl. large. est 1/8 de la rad. de l'arbre. L'écrou est mis sur le noyau à 1/8 du couvercle.

Feb. 4. 1897. 5 – 6 P.M.

	Boîte	Noyau	Chambière
5.	90	110	120
5.10	105	110	128
5.30	115	120	128
5.35	112	120	

do 20 [illegible]

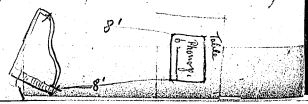
Raccourcissement deux millièmes, par dix degrés.

Feb. 5th to 11.

Records No. 3 to 8. Experiments with Bamboo-crossbar on Recorder instead of Tension spring

March 17.

Good position for Piano to 6° Phonogr.



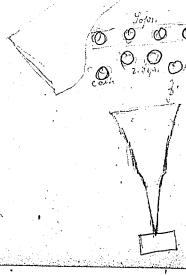
April 2nd 1897

Meilleur Tracens pour la langue 1.) 14, 2.) 30. 3.) 23.) 4.) 10.

Apr. 6. & 8.

Meilleur Tr. pour chant de chœur 30
" " piano, joué par un homme 23.

Position des Chanterelles et du piano le 6 Avril.



April. 9th. 1897

Commencé à deux Gr. # 10. Cire jaune. Piano.
Le tuyau est humide. Il faut [illegible] la sonde.
Le vacuum ne remonte pas la première fois
Il est important de remplacer la cire
autour des tuyaux de l'appareil à vacuum
et de mettre assez de paraffine
sur le bord de la cloche.

Recommencé à pomper à 4h.40 et au bout de
10 min le vacuum est à 6.
Commencé avec 12 lampes. et
après 12 min. en plus le vacuum est à 7
Le cylindre montre de larges plus jaunes
continué à pomper pour 7 min. (Vac à 7 1/2)
fermé le courant avec 10 lampes
et continué à pomper pour 10 min Vac 7 1/2
à 5.15 l'or commence à paraître
en nuages foncés. à 5.35 le Gr. est
vert laitue. à 5.40 le Vac est 7 1/4
arrêté le courant pour 5 min. (5.40 à 45).
La fluorescence est bleu au pôle + et
presque violacée au — (c) Les lames +
sont à peine rouge. La cloche est
peu chaude (3 lampes au moins de

Carmant. La pompe fait 27 coups p. m.
avec 3 16 c. lampes et une municipale.
A 6 h. le vert tourne en or métallique.
Arrêté à 6 h.

Recommencé à 8h25 m. avec 13 lampes.
à 8.55 le vac est à 1,2 après 55 min avec courant
mais le cyl. n'a pas gagné que très peu d'or.
5 min d'arrêt. Cour. courant 10 m. de passage
avec 10 lampes à 9.30 le vac. est 0,9
Arrêté la pompe pour 5 min. pendant le
passage du courant et le vacuum monte
à 1 h.

———

Cire vert.

May 7 th. Gr. # 21 (Piano Klein)
Doré au 7 th 10-8 Lampes (Vac. 1-3/4)

Laissé dans le bain fixatif (45) 8 jours et
9 mints. Commencé avec 1,7 Amp. fini
avec 2,2. —

———

May 18- 19,20 Fixé 2 copies 21 1,2 3.
Ac 3. Tourné 2 m plus long et 8 m plus long
que le moulin et 5 m conique (1 et 2
sont 8 m conique et 1/2 m plus large.
Temperature 75°

Temp. dans la boîte 110 à 122
" " le noyau 115 à 128
exposé pendant une heure en tout.

L'eau chaude est tirée de la chaudière avec un tuyau de caoutchouc ca. 15" plan haut.

May 20 # 4 (21) Cire jaune
Chauffé à 132 et 122, 1 heure
[illegible]

May 21. # 5. Cire ouvrée (ancien maître.)

Bâtonnet 7 [illegible] et 1 [illegible] plus gros que moulé
Chauffé la boîte à 120 avant de mettre le moule. L'eau dans la chaudière à 115

May 23 Le Sept. 1 [illegible] 1897.

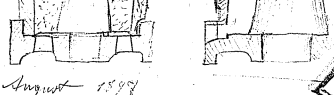
Expérimenté avec différentes manières à fondre les cylindres et filtrer la cire.

1/ Moule avec fond perforé et axe rotatif avec soupape d'aluminium

a. Plongé le moule dans la grande marmite en Pb. Wks. à 321°.

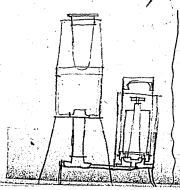
b. Versé la cire filtré à 380° dans une boîte de fer-blanc et plongé le moule là-dedans.

c/ Le fond du moule est ouvert sur le coté et la partie cylindrique du moule est ~~[illegible]~~ soudée 3/16" pour laisser entrer la cire et baissé pour le fermer.



3/ August 1897

Préparé le mécanisme pour filtrer la cire dans la marmite d'Alum. qui est muni d'un tuyau avec robinet pour laisser couler la cire par en dessous dans le moule.



August 28 [illegible] 1897

Put Rec. Stylus of axis into Recordings 15 x 20
Rep. Cal of axis " Reproducers
No more coke but more Soratch

Septembre 7. to 11. 1897.

Doré les cyl. # 2. 18. 19.

2 vieille cire sans essence!

Dorure belle métallique un peu rougeâtre.

L'anode s'est rapproché du cyl. pendant l'opération jusqu'à 1/16"

18. Cire ordinaire des Phonogr. Wks.

monté en plongeant.

Dorure très rouge.

19. Cire mélangé, moitié vieille sans ess.

moitié nouvelle ordinaire avec 7% de

filé dans petite marmite d'agat

réchauffé et monté en plongeant (1.) 6.)

Dorure jaune magnifique. 2 suffisaves.

1

Sept. 24. Moule # 5.

	Chaudière	Boîte	Moyenne
Cyl. # 1 4.30.	115	100.	10.2
5.	132	120	127
5.30	127	127	129
5.35		114	127 +)

doré en temps de presse.

+) Temperature extérieur du cylindre

L'eau arrêté et les lampes éteintes.

Gratte terriblement. mots entiers

Cyl. # 2. (Tres ... ou côté Zinné

au Four seulement 2me fois chargés.)

9.48.	115	87.	110.
10.10	122	112	124
10.30	124	107	121 ½
10.38	124	106 (lampes)	122

éteint les lampes avant de commencer

et retiré après 12 min. seulement dans

Pas assez pressé.

Sept. 29. 1898. V.

Rincé le même dans alcool de 110° ~~C~~ et un dans l'eau. Sp. pas passé à 80°.

	Pouls	Bras	Moyen
10h.	~~138~~ 136	100.	112
10h 30.	138	104.	125
11.30	130	102	115

Trop [illegible].

Sept. 25. 98. # 4. V.

[illegible]

[illegible] une fois alcool froid (Ranf.)

Tourné à gauche 3m 9h 8m pas dog à [illegible] respiré pendant la nuit.

			Sleep après
9. 45.	120	90.	110
10.15.	après l'Oeuf (fin)		114
10.55	127	92.	116

Rafraîchi du même du bout d'une heure

Trop peu tout à fait assez, Gratte

Louis [illegible]

5 V.

à 6h 3m. 10m.

2.25.	114.	75	105.
3.	115	80.	112.

3h après l'Oeuf

3.25	117	80	113

Le cordée a été rincée avec du Naph. deux eaux. Le vin et de l'eau coulante

6. V. Sept. 29. 1897

à 12. 5m et 10m. Rincé avec Naph. Chloroform au Bain froid 22 lo 1 Alcool C et Eau coulante

9.55.	90.	70.	70.
10.30.	106	80	102 après l'Oe.
10.50	100	90	105 ½

Sept. 30. # 7 V.

à 7h 8. 5m et 8m. Rincé avec Naph. Chloro. 2 Alcool et Eau coulante.

9.	88.	72.	
10.	104	90	101 ½

Levé l'Oeuf à 9.25 (102)

Sept 30. 97. III 4. 5h 13m 72°

Rinsé dans Napht. Chaud 24h. et Eau froide.

2h10	100	82	?	Lait Véron
320	111	82	108	au commencement

Le moule n'est pas enfumé, il est percé en plein air à 82°. Lait mis dans le Lamp. de 105 à 108 et enlevé avec Liq.

Sept 30 V. 8. Eau glacée 44°

Rincé dans Naphta + Ether et Eau froide

3h	109	83.	?
4 20	113	83	110

Oct. 1. 1897

et V. 9 9m 33s

Rincé avec éther froid. — Rapriché le lait à un peu avec de la glace à 74°. La chaleur dans le moule monte dans seulement à 115°. Lait 3/4 h. Rapriché dans glace et sel à zero.

Oct. 4. V. 10

Formé Cyl. 10m D. and 13m L. Orga Fers moulés. cooled to zero for trois heures. chauffé doucement à cent-cinque pendant 1 heure et vingt-min. et mouvé à Zero.

V. 11

Oct. 7. Cyl. formé 9m et 24m pl. à 70°

Rapriché pendant la nuit dans glace et sel; entre tout juste dans le moule.

8.50.	78.	68.	
10 —	120	68	115

Rapriché dans de l'eau glacée 33° cassé. Se fend en 3, 2 heures après de sortir du moule. Retiré du moule dans la grande bath à

791
96 Oct. 7. III 5 774.800.158.-65

Vinée 6 mois dans Bouteille, [illegible] de cire 3.7 eau contenant. Cyl. 45 cm² 22 cm pl. d'à 65 mettre cyl avec Cl₂ et Vin, et Eau ammoniacale respectivement (à 20°; 1 h)

		(Begin)		
3.—	114.	101		
4.30.	120.	72	115	retiré dans [illegible]

pas bon. [illegible]

Oct. 8. V 12. 62° 801.5 - 774.5. 344.

1.50.	86.	70-100.	—
2.30.	105	110	101
3.—	120	109	125
3.25	130	114	

1.) Resp. dans glace et cyl à zero 2 h. [illegible]
Cyl. 5 h et 20 pl. gr. à 63°.

2.) Resp. dans Eau glacée et Salée 32°.

Des rubans de cire minces sont forcés entre les concavités et le noyeau 10 mm de largeur.
C'est sur des bleues cyl. pitché et réchauffé à 114° cire de 5 ans et nouvelle. (# 13)

Oct. 19.-21.

[illegible] Cyl. # 29 cire de 5 ans, 28 cire vieille [illegible]
et # 26 cire [illegible]

Commencé # 29 à 5 h. soir et resté à 9 h. le lendemain matin, par cycle j'a une baisse d'environ 1½° qui a l'air de gresser.
Commencé # 18 cire vieille à 10.35 (13 janvier 3 [illegible])
Il toujours rouge-cuivre. Les anneaux bleu nouvelle l'air dans la chaudre 2 fois.
Sorti à 9 h. 15 le lendemain, tout rouge. Les mis dans l'armoire à glace à 5.30 du soir et laissé là pendant la nuit.
mis dans le bain le 21. à 9 h. m.
L'ammoniac ne monte pas sous la cloche, mais reste à 0,1-0,2 à peu près ½ minute, monte à 1, retourne à 0,2. et remonte assez rapidement à 1,8 et bientôt à 2 (il a été ajusté à 2 avec le cyl. provisoire)

Oct. 25. 1897

[illegible]

143

Dec. 23. 1897

		Record		Time	
Arnold # 4	Cor. 125	[illegible]	125	30 min.	
[illegible]	126	130	125	25 min.	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
D 4	125	125	112	25	
[illegible] B.	123	125	90-12	22	"
" B. [illegible]	112		112	18	"
" [illegible]	123-3		112	18	"
" B. " 8X12			112	18	"

May 23 2d 1899

[illegible] 111 B.

May 23 2d 1899.

Revised Concert-record # 1A & R

May 24th 99. [illegible] 2. & R

June 9th # 1A & R. See Day Book last page

Cor. 126 B. 132 Time 120 114 65 min.

Not very good Number Book!

1 m. Carries at 70

Cinn. [illegible] Game 1 m. [illegible]

143

June [illegible] 1879

[illegible] 2 (114) [illegible]

[illegible] 135 [illegible] 1 [illegible] T'100 [illegible] 25

No 9.

[illegible] 24 [illegible] 94.

[illegible] 14(5)

B. 127. C 120-[illegible] 25

[illegible]

[illegible] Exhausted [illegible]

Sept 4 1879

Experiment with Washing of Cotton

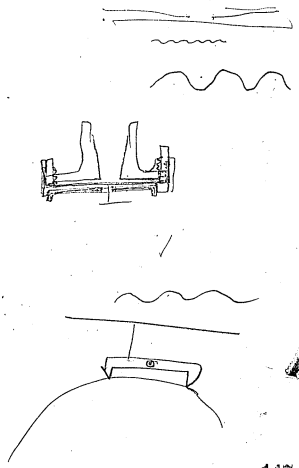
See Dup. Book IV

No. 111 White blanks of 50% and 60%

of felspar - parts with regular Wax

Phenomena hard and rough

Take the same as before



33 [illegible] March 1902.

Experiments plating on glass, with finish metals in vacuum.

March 22. Plated piece of glass 1/2 with silver 1/2 with Cadmium, overlapping the two metals in center of glass 1/2 in. Silver plated evenly without turning black at edge. Plated rapidly. Cadmium in very [illegible] deposition taking about one hour & a half to deposit a [illegible] This transparent skin melted very high voltage. At one time in [illegible] the cadmium [illegible] is bright black where the cadmium anode was fastened to the platinum conductor and instantly the glass & vacuum pump came rooted in a few minutes before.

March 26. Plated glass with silver. Obtained a good heavy coating but of a yellowish color, probably because the support for the glass was hastily made first time.

March 27 Plated glass with silver. Had nothing [illegible] but glass & two steel clamps in vacuum pump. Heavy even deposit in 1 1/2 hrs. Edges did not turn black. Silver on center of glass turned a little dull. Coated only 1/2 of the surface of the glass.

March 27 3:30 P.M. Started to plate other half of same glass with zinc overlapping 1/2 in. over silver at center. Had to use [illegible] very high voltage until zinc started to deposit. Deposit started to show about 1 hour after current was turned on. After plating for about 2 hours with the high voltage had to reduce voltage to same strength

takes to plate gold & silver. Can do vacuum jar get quite hot without discoloring deposit. Finished plating at 8 next morning. Mch. 30 - Started in about 1 hour Results: Got a beautiful even deposit over entire surface without discoloring at edges. Anodes were 1/8" wide and about .002" thick. Used glass cathode, mounted on glass support, half way between anodes.

Mch. 28. Plating mirror with bismuth & silver. At 5:30 started to plate 1/2 the surface of glass with silver. Current was a little too strong & anodes too narrow and were only 1/8" wide. Started with 10 lamps and in about two minutes increased to 9 lamps. Deposited more freely & also spread more over surface. Left on plating with nine lamps until narrow anode or electrode limited. Deposit good but not heavy at edges. Should have had both electrodes 1/8" wide strip of bismuth.

Mch. 29. Peeled other half of same glass with silver. Finished Monday morning. Good bright coating. In the afternoon same day Mch. 29 started to plate another piece of glass with silver over half the surface. Used new vacuum jar & also used rotator to support glass. Metal on rotator did not

seem to affect the plating. Finished plating Monday morning Mch. 30. Good bright coating all over.

Mch. 31 - Afternoon. Started to plate other half of glass with bismuth overlapping 1/2" over silver. Started with 9 lamps & 7 buttons on rheostat. In about 3 minutes the vacuum jar became so heavily coated that I could not see through it. Glass had a very heavy even deposit of a smokey grey color. Deposit so heavy that should not see through glass by holding it up to light.

Coated the different glasses with Otto negative varnish & with white shellac. Negative varnish is good for covering silver, copper, bismuth, but no good on zinc peeling & shriveling the zinc as soon as it is applied. Shellac varnish is no good giving the surface a nasty dirty color. Negative varnish Otto good for coating cadmium.

Plated a good wax record with cadmium actual time taken to coat record, with a heavy deposit, about 5 to 8 minutes. Total time, allowing for rheostat & cooling about 30 minutes. Deposit on record was of a beautiful silver gray color evenly distributed over entire surface. Electrodes about 1/8 in. wide & very thin. Used same amount of current as for coating glass. Put record in coppering bath at 6:30 P.M. Had to use 2 1/2 to 3 amperes

too wet as cadmium has more resistance than gold or silver. Started to cover very slowly but next morning Apr. 1 record was covered all over. Took out of bath Apr. 2, 12 o'clock noon and all finished to 2:30 P.M. Apr. 2, 1902.

Apr. 2. Plated glass with Gine - O.K.

Apr. 3 Plated on same glass with silver

Apr. 1-02. Record made on chalk coated with oxide of zinc. Plated with gold. Gold deposited quite freely but the surface of the record was of a grayish color

May 31/02 Plated record, made on Mars "Marvine Soap", with gold. Deposited very freely. Obtaining a bright heavy coat of gold in 5 hours. Good Vacuum

Sept. 3, 1902 Plated white silk lace. Placed lace in a glass cylinder in a small vacuum jar. Plated on one side with a thin coat of gold. Time 5 hours.

Sept. 4-5. Black silk lace. Plated same way as above but plated on both sides, taking lace out of vacuum jar and turning it over after one side was plated

Sept. 8. White silk lace. Plated same way as above but using one gold & one silver anode in vacuum jar. Plated on one side. Color a little lighter than with gold alone, time 5 hours.

Sept. 10. Black silk lace. Plated on one side, first with a heavy coat of silver and then with a thin coat of gold. Nuit.

Sept. 3, 1902 Plated two nickel discs with a thin coat of platinum on one side. Fred B. Dally.

No. 3 Plated black cloth braid with gold. Placed two discs or rotators with glass cylinders on opposite sides in large vacuum jar, revolving the rotators both together by means of a magnet connecting the two rotators with a belt and pulley. On revolving the said passed back and forth in

November 16. 1902.

Experimented with Chocolate.

I. Poured molten Choc. into mould without a core and after setting a little, scooped out the centre-part; then put mould in freezer in icewater for 1½ hours. Came out nice and bright. Record fluff and sharp; but afterwards a fine moisture soon condensed on record and spoiled surface.

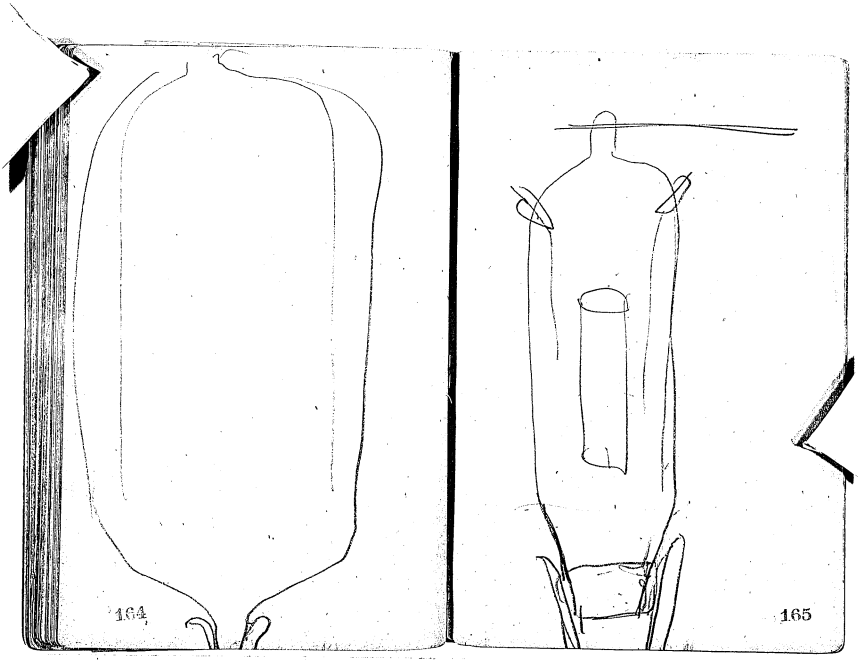
II. Put paper-shell on core and worked molten Choc. into mould with spoon and fingers. Could not make it to run full. Cooled in icebox ½ hour (50°) after withdrawing core from mould, put it into a dried icebox in cool room. No sweating. Those parts of record, where Choc. filled mould, were plain and sharp.

August 3, 1903. Plated phonographic record with gold continuously for 7 days, resetting the timer. At end of seven days could not get gold to deposit bright.

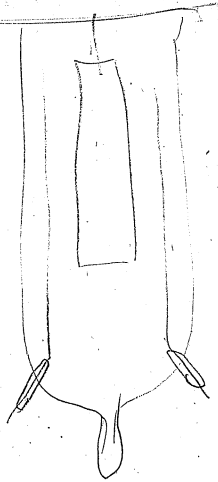
August 7, 1903. At Mr. Dyer's suggestion plated record with gold using the anode in another bath and which gold was found not deposit in a fine state even directly against the record in the same Bunsen battery.

August 8, 1903. Started to plate phonorecord with silver to see if silver mould will work better in the Neumann & Miller process of moulding. Gold does not hold long on account of the acid used in the perfection of the moulding and also on account of the intense heat used in moulding.

Aug. 20. Plated record in vacuum for ½ hr with gold then ~~nickel~~ nickel plated it for 35 min in bath using 1.3 to 1.5 volts ½ amp. After plating for 35 min transferred directly without washing nor drying to copper bath. After a few failures on account of nickel stripping and also refusing to adhere to copper succeeded to obtain good results, nickel adhering perfectly to copper.


164
165

Left



Nov. 19th 1895. 8 A.M. Nov. 21.

46 (long) very dull		
46 dull.	3	Very dull
52 not affected		
56 " "		
55 slightly affected		
60. Very slightly "		Very slightly dull
60 " " "		dull
61 Very dull	— —	Very dull
66. Very bright		
60. Slightly affected.		
57. Dull		Very dull
64 Very slightly affected.		

Nov. 21. 9 AM 1895 Nov. 27. 4 PM.

77. Not scratch — bright slightly
83 Slightly scratchy — considerably scratchy
80 Very slightly scratchy — bright
81 no scratch — bright
82 Slightly scratchy (considerably scratchy) — bright

On 82 after 24 hs exposure small red spot appeared which came off at the 17th showing. Taken out and exposed again Friday 10 AM

86 Exposed to practically temperature before timing off. Very faint scratch. Exposed Friday 22 10 AM

90 Very faint scratch Exposed Nov. 26. 4.
93. Very " " " " " 27 " 4 PM

[illegible] bright
[illegible] Bright dull. bright underneath
[illegible] Very dull dull " "
[illegible] dull bright
[illegible] bright
[illegible] Very dull dull
[illegible] " " dull. Very slightly [illegible]
[illegible] Very slightly scratch bright [illegible] dull [illegible]
[illegible] moderate very dull
[illegible] bright but considerably scratch
[illegible] " "
[illegible] " "
90 " "
91 — "
92 " "
[illegible] " "
[illegible] — "
[illegible] " "

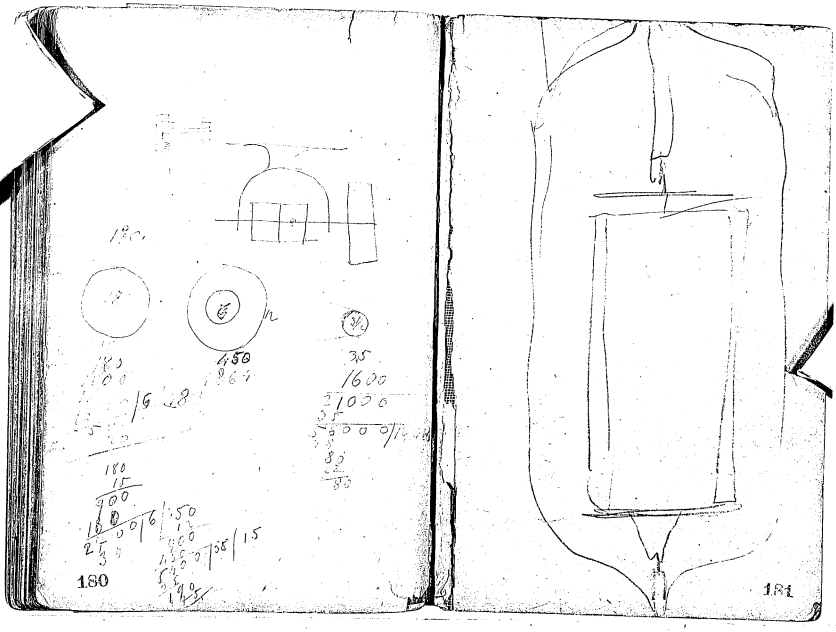
#56 CM is the best of the nitrocellulose
The 13th of November. 1896 It is just as bright as new — no scratch, no dew — no fuzziness! —!—!
HW. #46 takes the best records, does not scratch but if not frequently used it gets a dull hazy surface.

Received Nov. 30th AM Turned off; previously
84 [illegible]
W.W. [illegible]
56 " "
60 No secretes
54 Lachrony
46 Little secretes
50 Mouth! Lachrony [illegible]

Box # 16 contains 5 Dupl. cast solid, pressed hydraul.
3 Dupl. filled with Paraffin, 4 shell Dupl.

4 Pressed Dupl of B. C E L P. S O V W U

2 Shells with and without cores

1 Faulty originals (new style)

3 Old Thresh (regular cylinders) 2. WM Dupl.